QUARTERLY REPORT

ST. CHARLES COUNTY WELL FIELD

MONITORING PROJECT

GRANT NO. DE-FG05-89OR21864

Prepared by: Stanley Remington
January, February and March 1997

MONTHLY REPORT

JANUARY 1997

BY

Stanley Remington

Consulting Hydrologist

I. CHEMICAL ANALYSES

The results from sampling wells RMW-2 and PW-9 have been received and are appended. These wells were sampled December 16, 1996. Well PW-9 showed a normal range of chemical parameters and all were within historical ranges. The usual high iron content of the untreated water was present but this is mostly removed by treatment and brought to well below the NPDES limit.

Well RMW-2 was normal except for a fairly high arsenic reading. These readings have been fairly consistent during the past few months. The Department of Energy has also been experiencing these readings. At present there is no apparent explanation for the readings. The NPDES limit for arsenic is 100.0 ug/L. My last analysis showed a reading of 95.2 ug/L. This is close to the result of the DOE from the same well at the same time. I will continue monitoring this observation well and work with the DOE to see if an answer can be found. Fortunately none of the County's pumping wells show any arsenic. PW-9 had a non-detection on the same day that I sampled RMW-2. RMW-2 is about a quarter of a mile from PW-9. I will continue monitoring both wells PW-8 and PW-9 since both are nearest to RMW-2. I don't envision any problems in the near future. The arsenic content is still below the NPDES limit.

Appended are the results from the Department of Energy's treated waters from the raffinate pits at the old chemical plant site at Weldon Spring. All of the parameters are well below the NPDES limits, which shows the continuation of the

treatment techniques has been very effective. These treated waters are discharged into the Missouri River.

II. FUTURE PLANS

I will sample PW-8 during February 1997. I will work with the DOE to see if we can determine what is causing the high arsenic readings in RMW-2. Incidentally, RMW-2 is the only one of the RMW observation wells and pumping wells belonging to St. Charles County to show this fairly high reading for arsenic.

III. MISCELLANEOUS

Appended are the St. Charles County Monthly Water Sales Report and the results of the sampling of the raw and treated composite waters of the St. Charles County Wells for gross alpha and beta. This was carried out by the St. Louis County Department of Health.

AMERICAN TECHNICAL & ANALYTICAL SERVICES, INC.

875 Fee Fee Road • Maryland Heights, MO 63043 • (314) 434-4570 • FAX (314) 434-0060

January 13, 1997

Stanley M. Remington
956 Broadmoor Lane
St. Charles, MO 63301

RE: ATAS #17721.01-#17721.02
Weldon Spring

Dear Mr. Remington:

Enclosed are the analytical reports for the samples received in our laboratory on December 16, 1996.

If, in your review, you should have any questions or require additional information, please call Rhonda Tinker, Assistant Project Manager, or me at (314) 434-4570.

Thank you for choosing ATAS for your analytical needs.

Sincerely,

Richard H Mannz

Richard H. Mannz
Project Manager

Enclosures

RHM/dms

ATAS 875 Fee Fee Road • Maryland Heights, MO 63043 • (314) 434-4570 - FAX (314) 434-0080

CLIENT: STANLEY M. REMINGTON
919 BROADMOOR LANE
ST. CHARLES, MO 63301
ATTN: STANLEY M. REMINGTON

REPORT: 1772101RA(269)

DATE : 01-13-97

SAMPLE MATRIX : WATER
ATAS EPISODE : #17721
DATE SUBMITTED: 12-16-96
PROJECT REF. : WELDON SPRING

RESULTS REPORTED IN pCi/L

CLIENT ID	ATAS ID	RADIONUCLIDE	RESULT
RMW-2	17721.01	GROSS ALPHA	5 +/- 6*
RMW-2	17721.01	GROSS BETA	5 +/- 5*
RMW-2	17721.01	TOTAL URANIUM (mg/L)	0.008
PW-9	17721.02	GROSS ALPHA	1 +/- 2*
PW-9	17721.02	GROSS BETA	5 +/- 5*
PW-9	17721.02	TOTAL URANIUM (mg/L)	<0.005

* VARIABILITY OF THE RADIOACTIVE DISINTERGRATION PROCESS (COUNTING ERROR) AT THE 95% CONFIDENCE LEVEL, 1.96σ.
pCi/L= PICOCURIES PER LITER
mg/L = PARTS PER MILLION(PPM)

ATAS 875 Fee Fee Road • Maryland Heights, MO 63043 • (314) 434-4570 - FAX (314) 434-0080

CLIENT: STANLEY M. REMINGTON
956 BROADMOOR LANE
ST. CHARLES, MO 63301
ATTN: STANLEY M. REMINGTON

REPORT: 1772101EX(269)
DATE : 01-13-97

SAMPLE MATRIX : WATER
ATAS # : 17721.01
DATE SUBMITTED: 12-16-96
DATE ANALYZED : 12-20-96
METHOD REF. : SW846-8330, EPA METHODOLOGY
PROJECT : WELDON SPRING
SAMPLE ID : RMW-2

RESULTS REPORTED IN ug/L OR PARTS PER BILLION(PPB)

EXPLOSIVE	QUANTITATION LIMIT	RESULTS
HMX	13.0	ND
RDX	14.0	ND
1,3,5-TNB	7.3	ND
TETRYL	10.0	ND
1,3-DNB	4.0	ND
NITROBENZENE	7.0	ND
2,6 DNT	9.4	ND
2,4 DNT	5.7	ND
2,4,6 TNT	6.4	ND
o-NITROTOLUENE	12.0	ND
p-NITROTOLUENE	8.0	ND
m-NITROTOLUENE	7.9	ND

ND= NOT DETECTED ABOVE QUANTITATION LIMIT

ATAS 875 Fee Fee Road • Maryland Heights, MO 63043 • (314) 434-4570 - FAX (314) 434-0080

CLIENT: STANLEY M. REMINGTON
956 BROADMOOR LANE
ST. CHARLES, MO 63301
ATTN: STANLEY M. REMINGTON

REPORT: 1772101EX(269)

DATE : 01-13-97

SAMPLE MATRIX : WATER
ATAS # : 17721.02
DATE SUBMITTED: 12-16-96
DATE ANALYZED : 12-20-96
METHOD REF. : SW846-8330, EPA METHODOLOGY
PROJECT : WELDON SPRING
SAMPLE ID : PW-9

RESULTS REPORTED IN ug/L OR PARTS PER BILLION(PPB)

EXPLOSIVE	QUANTITATION LIMIT	RESULTS
HMX	13.0	ND
RDX	14.0	ND
1,3,5-TNB	7.3	ND
TETRYL	10.0	ND
1,3-DNB	4.0	ND
NITROBENZENE	7.0	ND
2,6 DNT	9.4	ND
2,4 DNT	5.7	ND
2,4,6 TNT	6.4	ND
o-NITROTOLUENE	12.0	ND
p-NITROTOLUENE	8.0	ND
m-NITROTOLUENE	7.9	ND

ND= NOT DETECTED ABOVE QUANTITATION LIMIT

ATAS 875 Fee Fee Road • Maryland Heights, MO 63043 • (314) 434-4570 - FAX (314) 434-0080

CLIENT: STANLEY M. REMINGTON
956 BROADMOOR LANE
ST. CHARLES, MO 63301
ATTN: STANLEY M. REMINGTON

REPORT: 1772101EX(269)
DATE : 01-13-97

SAMPLE MATRIX : WATER
ATAS # : METHOD BLANK
DATE SUBMITTED: 12-16-96
DATE ANALYZED : 12-20-96
METHOD REF. : SW846-8330, EPA METHODOLOGY
PROJECT : WELDON SPRING
SAMPLE ID : METHOD BLANK

RESULTS REPORTED IN ug/L OR PARTS PER BILLION(PPB)

EXPLOSIVE	QUANTITATION LIMIT	RESULTS
HMX	13.0	ND
RDX	14.0	ND
1,3,5-TNB	7.3	ND
TETRYL	10.0	ND
1,3-DNB	4.0	ND
NITROBENZENE	7.0	ND
2,6 DNT	9.4	ND
2,4 DNT	5.7	ND
2,4,6 TNT	6.4	ND
o-NITROTOLUENE	12.0	ND
p-NITROTOLUENE	8.0	ND
m-NITROTOLUENE	7.9	ND

ND= NOT DETECTED ABOVE QUANTITATION LIMIT

ATAS 875 Fee Fee Road • Maryland Heights, MO 63043 • (314) 434-4570 - FAX (314) 434-0080

CLIENT: STANLEY M. REMINGTON
956 BROADMOOR LANE
ST. CHARLES, MO 63301
ATTN: STANLEY M. REMINGTON

REPORT: 1772101EX(269)
DATE : 01-13-97

SAMPLE MATRIX : WATER
ATAS # : LABORATORY CONTROL SAMPLE
DATE SUBMITTED: 12-16-96
DATE ANALYZED : 12-20-96
METHOD REF. : SW846-8330, EPA METHODOLOGY
PROJECT : WELDON SPRING
SAMPLE ID : LABORATORY CONTROL SAMPLE

COMPOUND	PERCENT RECOVERY
HMX	93 %
RDX	87 %
1,3,5-TNB	88 %
TETRYL	88 %
1,3-DNB	93 %
TNT	87 %
NITROBENZENE	88 %
2,6 DNT	93 %
2,4 DNT	88 %
o-NITROTOLUENE	91 %
p-NITROTOLUENE	100 %
m-NITROTOLUENE	97 %

ATAS 875 Fee Fee Road • Maryland Heights, MO 63043 • (314) 434-4570 - FAX (314) 434-0080

CLIENT: STANLEY M. REMINGTON
956 BROADMOOR LANE
ST. CHARLES, MO 63301
ATTN: STANLEY M. REMINGTON

REPORT: 1772101M(269)
DATE : 01-13-97

SAMPLE MATRIX : WATER
ATAS # : 17721.01
DATE SUBMITTED: 12-16-96
PROJECT : WELDON SPRING
SAMPLE ID : RMW-2

PARAMETER	REPORTING LIMIT	UNITS	RESULTS	DATE ANALYZED	METHOD REFERENCE
			INORGANICS		
NITRATE-SPEC	1.05	mg/L	ND	12-17-96	SW 418B
			METALS		
ARSENIC	5.0	ug/L	95.2	01-02-97	SW 6010
BEYLLIUM	1.0	ug/L	ND	01-02-97	SW 6010
COPPER	2.0	ug/L	2.7	01-02-97	SW 6010
IRON	20.0	ug/L	7900	01-02-97	SW 6010
LEAD	3.0	ug/L	ND	01-02-97	SW 6010
MANGANESE	1.0	ug/L	1000	01-02-97	SW 6010
MERCURY	0.1	ug/L	ND	01-03-97	SW 7470
ZINC	4.0	ug/L	34.2	01-02-97	SW 6010

ug/L = PARTS PER BILLION(PPB)
ND = NOT DETECTED ABOVE REPORTING LIMIT

ATAS 875 Fee Fee Road • Maryland Heights, MO 63043 • (314) 434-4570 - FAX (314) 434-0080

CLIENT: STANLEY M. REMINGTON
956 BROADMOOR LANE
ST. CHARLES, MO 63301
ATTN: STANLEY M. REMINGTON

REPORT: 1772101M(269)
DATE : 01-13-97

SAMPLE MATRIX : WATER
ATAS # : 17721.02
DATE SUBMITTED: 12-16-96
PROJECT : WELDON SPRING
SAMPLE ID : PW-9

PARAMETER	REPORTING LIMIT	UNITS	RESULTS	DATE ANALYZED	METHOD REFERENCE
			INORGANICS		
NITRATE-SPEC	1.0	mg/L	ND	12-17-96	SW 418B
			METALS		
ARSENIC	5.0	ug/L	ND	01-02-97	SW 6010
BEYLLIUM	1.0	ug/L	ND	01-02-97	SW 6010
COPPER	2.0	ug/L	ND	01-02-97	SW 6010
IRON	20.0	ug/L	5570	01-02-97	SW 6010
LEAD	3.0	ug/L	ND	01-02-97	SW 6010
MANGANESE	1.0	ug/L	359	01-02-97	SW 6010
MERCURY	0.1	ug/L	ND	01-03-97	SW 7470
ZINC	4.0	ug/L	16.8	01-02-97	SW 6010

ug/L = PARTS PER BILLION(PPB)
ND = NOT DETECTED ABOVE REPORTING LIMIT

ATAS 875 Fee Fee Road • Maryland Heights, MO 63043 • (314) 434-4570 - FAX (314) 434-0080

CLIENT: STANLEY M. REMINGTON
956 BROADMOOR LANE
ST. CHARLES, MO 63301
ATTN: STANLEY M. REMINGTON

REPORT: 1772101M(269)

DATE : 01-13-97

QA/QC

DESCRIPTION		PARAMETER	RESULTS	
METHOD BLANK	01-02-97	ARSENIC	<5.0	ug/L
METHOD BLANK	01-02-97	BERYLLIUM	<1.0	ug/L
METHOD BLANK	01-02-97	COPPER	<2.0	ug/L
METHOD BLANK	01-02-97	IRON	<20.0	ug/L
METHOD BLANK	01-02-97	LEAD	<3.0	ug/L
METHOD BLANK	01-02-97	MANGANESE	<1.0	ug/L
METHOD BLANK	01-03-97	MERCURY	<0.1	ug/L
METHOD BLANK	01-02-97	ZINC	<4.0	ug/L
CONTROL SPIKE	01-02-97	ARSENIC	107 %	RECOVERY
CONTROL SPIKE	01-02-97	BERYLLIUM	105 %	RECOVERY
CONTROL SPIKE	01-02-97	COPPER	102 %	RECOVERY
CONTROL SPIKE	01-02-97	IRON	99 %	RECOVERY
CONTROL SPIKE	01-02-97	LEAD	104 %	RECOVERY
CONTROL SPIKE	01-02-97	MANGANESE	103 %	RECOVERY
CONTROL SPIKE	01-03-97	MERCURY	100 %	RECOVERY
CONTROL SPIKE	01-02-97	ZINC	103 %	RECOVERY

ATAS

AMERICAN TECHNICAL & ANALYTICAL SERVICES, Inc.

875 Fee Fee Road • Maryland Heights, MO 63043-3211 • Office (314) 434-4570 • FAX (314) 434-0060

PAGE ___ OF ___

CHAIN OF CUSTODY RECORD

ATAS Client Name: STAN REMINGTON

Project Name: WELDON SPRING

Project #:

Form Completed By:

PO #:

Sample ID	Sample Date	Sample Time	Sample Matrix	Grab	Comp	No. of Containers	Type of Analysis: Nitros HNO3	Metals	Gross α	Gross β	Total U	TSS	Preservative: Ice / Chemical (see below)	Remarks	Lab Use Only: Initials / Date / Location/Temp
RMW-2	12/16/96	0845		X			X X	X	X	X	X				17721.01
PIV-9	"	0900		X			X X	X	X	X	X				02
WATER TREAT. PLANT					X							X			

Initials: LM

Date: 12-17-96

Location/Temp: BA 4°C

Relinquished by:	Received by:	Relinquished by:	Received by:
Signature: STAN REMINGTON	Signature: L. MEERBERG	Signature:	Signature:
Printed Name: WELDON SPRING	Printed Name: ATAS	Printed Name:	Printed Name:
Firm:	Firm:	Firm:	Firm:
Date/Time: 12/16/96 0955	Date/Time: 12-16-96 0955	Date/Time:	Date/Time:

Turnaround Requirements

___ 1 to 2 working days

___ 3 working days

___ 5 working days

___ 10 working days

___ 15 working days

Preservative codes

A - none

B - HNO_3

C - H_2SO_4

D - NaOH

SEND RESULTS TO (Name & Company): _____

Department of Energy
Oak Ridge Operations
Weldon Spring Site
Remedial Action Project Office
7295 Highway 94 South
St. Charles, Missouri 63304

January 29, 1997

Distribution:

QUARTERLY SITE AND QUARRY WATER TREATMENT PLANT EFFLUENT DATA SUMMARY - FOURTH QUARTER 1996

Enclosed please find the subject effluent data summary sheets for the batches of water treated and discharged during the fourth quarter of 1996. Three batches (S#91 through S#93) and one batch (Q#47) have been treated and discharged from the site and quarry water treatment plants, respectively.

If you have any questions, please call me or Bruce Ballew at (314)441-8978.

Sincerely,

Jerry S. Van Fossen

Jerry S. Van Fossen
Deputy Project Manager
Weldon Spring Site
Remedial Action Project

Enclosure:
As stated

cc w/o enclosure:
Martha Windsor, MDNR

Distribution List

Larry Erickson
Division of Environmental Quality
Missouri Department of Natural Resources
Post Office Box 176
Jefferson City, Missouri 65102

Dan Wall
Remedial Project Manager
U.S. Environmental Protection Agency
Region VII
726 Minnesota Avenue
Kansas City, Kansas 66101

Stanley Remington
Consulting Hydrologist
956 Broadmoor Lane
St. Charles, Missouri 63301

St. Louis County Health Department
111 South Meremac
2nd Floor
Clayton, Missouri 63105

Terry Gloriod
Vice President for Production
St. Louis County Water Department
535 North New Ballas
St. Louis, Missouri 63141

Dave Visintainer
City of St. Louis Water Division
Chain of Rocks Plant
10450 Riverview Drive
St. Louis, Missouri 63137

SUMMARY OF SWTP (BATCH 091) ANALYTICAL RESULTS

10/29/96 1130

From all parties receiving samples on 10/17/96

PARAMETER	NPDES LIMITS (mg/l) Unless noted	PMC DATA RESULTS	MoDNR DATA RESULTS	EPA DATA RESULTS	ST. CHARLES COUNTY DATA RESULTS	ST. LOUIS COUNTY H & W DATA RESULTS
COD	90 / 60	6.9 mg/l		NA	NA	NA
TSS	50 / 30	2.0 mg/l		NA	NA	NA
ARSENIC	0.1	<0.0015 mg/l		NA	NA	
CHROMIUM	0.1	<0.001 mg/l		NA	NA	
LEAD	0.1	<0.001 mg/l		NA	NA	
MANGANESE	0.1	0.0014 mg/l		NA	NA	
MERCURY	0.004	<0.0001 mg/l		NA	NA	
SELENIUM	0.02	0.002 mg/l		NA	NA	
CYANIDE, AMENABLE	0.0075	<0.004 mg/l		NA	NA	
2,4-DNT	0.22 ug/l	<0.015 µg/l		NA	NA	
FLUORIDE	4.0	3.18 mg/l		NA	NA	
NITRATE + NITRITE AS N	20	3.0 mg/l		NA	NA	
SULFATE	500	300 mg/l		NA	NA	
CHLORIDE	*	242 mg/l		NA	NA	
GROSS ALPHA	*	5.38 ±2.75 pCi/l		NA	NA	3.5 ±1.3 pCi/l
GROSS BETA	*	15.2 ±3.32 pCi/l		NA	NA	6.7 ±1.1 pCi/l
URANIUM, TOTAL	**	1.46 ±0.092 pCi/l		NA	NA	1.2 ±0.3 pCi/l
RADIUM-226 ***	*	0.494 ±0.214 pCi/l		NA	NA	
RADIUM-228 ***	*	1.54 ±0.726 pCi/l		NA	NA	
THORIUM-230 ***	*	0.305 ±0.237 pCi/l		NA	NA	NA
THORIUM-232 ***	*	0.130 ±0.152 pCi/l		NA	NA	NA
pH (Std. Units)	6 - 9	7.32		NA	NA	
PRIORITY POLLUTANTS	(SEE BELOW)					
1. SEMI-VOA	*	NA		NA	NA	NA
2. VOA	*	<10 µg/l		NA	NA	NA
3. PCBs/PESTICIDES	****/*	<1.0 µg/l / NA		NA	NA	NA
4. METALS/OTHERS	*	NA				

* = Monitoring Parameter

** = Design Value of 30 pCi / l; Not to Exceed 100 pCi / l

*** = Monitoring parameter once per month.

**** = Effective limit of 1 µg/l

NA = NOT ANALYZED

= Data received after batch was discharged

SUMMARY OF SWTP (BATCH 092) ANALYTICAL RESULTS

11/18/96 0900

From all parties receiving samples on 11/7/96

PARAMETER	NPDES LIMITS (mg/l) Unless noted	PMC DATA RESULTS	MoDNR DATA RESULTS	EPA DATA RESULTS	ST. CHARLES COUNTY DATA RESULTS	ST. LOUIS COUNTY H & W DATA RESULTS
COD	90 / 60	<10.0 mg/l		NA	NA	NA
TSS	50 / 30	<2.09 mg/l		NA	NA	NA
ARSENIC	0.1	0.0036 mg/l		NA	NA	
CHROMIUM	0.1	0.0037 mg/l		NA	NA	
LEAD	0.1	<0.0012 mg/l		NA	NA	
MANGANESE	0.1	0.0043 mg/l		NA	NA	
MERCURY	0.004	<0.00010 mg/l		NA	NA	
SELENIUM	0.02	0.0066 mg/l		NA	NA	
CYANIDE, AMENABLE	0.0075	<0.00147 mg/l		NA	NA	
2,4--DNT	0.22 ug/l	<0.20 ug/l		NA	NA	
FLUORIDE	4.0	2.88 mg/l		NA	NA	
NITRATE + NITRITE AS N	20	0.750 mg/l		NA	NA	
SULFATE	500	408 mg/l		NA	NA	
CHLORIDE	*	266 mg/l		NA	NA	
GROSS ALPHA	*	< 1.27 pCi/l		NA	NA	3.4 ± 1.2 pCi/l
GROSS BETA	*	4.01 ± 0.767 pCi/l		NA	NA	6.6 ± 1.1 pCi/l
URANIUM, TOTAL	**	1.23 ± 0.025 pCi/l		NA	NA	1.4 ± 0.3 pCi/l
RADIUM-226 ***	*	0.725 ± 0.531 pCi/l		NA	NA	
RADIUM-228 ***	*	0.199 ± 0.448 pCi/l		NA	NA	
THORIUM-230 ***	*	0.114 ± 0.069 pCi/l		NA	NA	NA
THORIUM-232 ***	*	<0.0464 pCi/l		NA	NA	NA
pH (Std. Units)	6 – 9	6.96		NA	NA	
PRIORITY POLLUTANTS	(SEE BELOW)					
1. SEMI-VOA	*	NA		NA	NA	NA
2. VOA	*	NA		NA	NA	NA
3. PCBs/PESTICIDES	****/*	<0.12 ug/l / NA		NA	NA	NA
4. METALS/OTHERS	*	NA				

* = Monitoring Parameter

** = Design Value of 30 pCi / l; Not to Exceed 100 pCi / l

*** = Monitoring parameter once per month.

**** = Effective limit of 1 µg/l

NA = NOT ANALYZED

= Data received after batch was discharged

SUMMARY OF SWTP (BATCH 093) ANALYTICAL RESULTS

12/6/96 0900

From all parties receiving samples on 11/25/96

PARAMETER	NPDES LIMITS (mg/l) Unless noted	PMC DATA RESULTS	MoDNR DATA RESULTS	EPA DATA RESULTS	ST. CHARLES COUNTY DATA RESULTS	ST. LOUIS COUNTY H & W DATA RESULTS
COD	90 / 60	<9.0 mg/l		NA	NA	NA
TSS	50 / 30	<6.0 mg/l		NA	NA	NA
ARSENIC	0.1	0.0029 mg/l		NA	NA	
CHROMIUM	0.1	<0.004 mg/l		NA	NA	
LEAD	0.1	<0.001 mg/l		NA	NA	
MANGANESE	0.1	0.0026 mg/l		NA	NA	
MERCURY	0.004	<0.00020 mg/l		NA	NA	
SELENIUM	0.02	0.0024 mg/l		NA	NA	
CYANIDE, AMENABLE	0.0075	<0.004 mg/l		NA	NA	
2,4-DNT	0.22 ug/l	<0.20 µg/l		NA	NA	
FLUORIDE	4.0	1.6 mg/l		NA	NA	
NITRATE + NITRITE AS N	20	0.75 mg/l		NA	NA	
SULFATE	500	300 mg/l		NA	NA	
CHLORIDE	*	140 mg/l		NA	NA	
GROSS ALPHA	*	3.6 ±4.2 pCi/l		NA	NA	
GROSS BETA	*	5.9 ±4.4 pCi/l		NA	NA	
URANIUM, TOTAL	**	0.630 ±0.092 pCi/l		NA	NA	
RADIUM-226 ***	*	0.58 ±0.37 pCi/l		NA	NA	
RADIUM-228 ***	*	0.75 ±0.41 pCi/l		NA	NA	
THORIUM-230 ***	*	-0.017 ±0.056 pCi/l		NA	NA	NA
THORIUM-232 ***	*	-0.008 ±0.040 pCi/l		NA	NA	NA
pH (Std. Units)	6 - 9	6.51		NA	NA	
PRIORITY POLLUTANTS	(SEE BELOW)					
1. SEMI-VOA	*	NA		NA	NA	NA
2. VOA	*	NA		NA	NA	NA
3. PCBs/PESTICIDES	****/*	<0.80 µg/l		NA	NA	NA
4. METALS/OTHERS	*	NA				

* = Monitoring Parameter

** = Design Value of 30 pCi / l; Not to Exceed 100 pCi / l

*** = Monitoring parameter once per month.

**** = Effective limit of 1 µg/l

NA = NOT ANALYZED

= Data received after batch was discharged

SUMMARY OF QWTP (BATCH 047) ANALYTICAL RESULTS

11/4/96 0800

FROM ALL AGENCIES RECEIVING SAMPLES ON 10/23/96

PARAMETER	NPDES LIMITS (mg/l)	PMC DATA RESULTS	MoDNR DATA RESULTS	EPA DATA RESULTS	ST. CHARLES COUNTY DATA RESULTS	ST. LOUIS COUNTY H & W DATA RESULTS
COD	90 / 60	6.3 mg/l		NA	NA	NA
TSS	50 / 30	2.0 mg/l		NA	NA	NA
ARSENIC	0.1	0.0015 mg/l		NA	NA	
CHROMIUM	0.1	<0.001 mg/l		NA	NA	
COPPER ***	1	0.0058 mg/l		NA	NA	
LEAD	0.1	<0.001 mg/l		NA	NA	
MANGANESE	0.1	0.0083 mg/l		NA	NA	
MERCURY	0.004	<0.0001 mg/l		NA	NA	
SELENIUM	0.02	<0.0005 mg/l		NA	NA	
CYANIDE, AMENABLE	0.0075	<0.004 mg/l		NA	NA	
2,4-DNT	0.22 ug/l	<0.015 µg/l		NA	NA	
FLUORIDE	4.0	0.123 mg/l		NA	NA	
NITRATE+NITRITE AS N	*	0.207 mg/l		NA	NA	
SULFATE	500	149 mg/l		NA	NA	
CHLORIDE	*	193 mg/l		NA	NA	
GROSS ALPHA	*	4.47 ±1.64 pCi/l		NA	NA	1.3 ±0.8 pCi/l
GROSS BETA	*	12.0 ±2.37 pCi/l		NA	NA	3.1 ±1.0 pCi/l
URANIUM, TOTAL	**	0.758 ±0.018 pCi/l		NA	NA	<1.0 pCi/l
RADIUM-226 ***	*	0.252 ±0.153 pCi/l		NA	NA	NA
RADIUM-228 ***	*	0.383 ±0.541 pCi/l		NA	NA	NA
THORIUM-230 ***	*	0.164 ±0.166 pCi/l		NA	NA	NA
THORIUM-232 ***	*	<0.189 pCi/l		NA	NA	NA
PRIORITY POLLUTANTS	(SEE BELOW)					
1. SEMI-VOA	*	NA	NA	NA	NA	NA
2. VOA	*	NA		NA	NA	NA
3. PCBs	*	<1.0 µg/l		NA	NA	NA
4. PESTICIDES	*	NA			NA	
5. METALS / OTHERS	*	NA			NA	
pH	6.0 - 9.0 S.U.	6.36	NA	NA	NA	NA

* =MONITORING ONLY, NO PERMIT DISCHARGE LIMITS

** = Design Value of 30 pCi / l; Not to Exceed 100 pCi / l

*** = Parameter required once/month. Sampled this batch.

NA = Not analyzed.

= Data received after batch was discharged

ST. CHARLES COUNTY MONTHLY WATER SALES REPORT

DATE OF REPORT 01-06-97

MONTH OF REPORT DEC96

WATER PRODUCTION			283,414,000
WASHWATER USED			4,675,000
DELIVERED TO SYSTEM			278,839,000
MO. AMERICAN WATER			
	BOOSTER STATION		171,069,000
67004132835-007	FRANCIS HOWELL		37,700
67004132850-007	MO. HWYS & TRANS.		100
67004133000-004	M.K. FERGUSEN		242,500
67004133040-015	M.K. FERGUSEN		449,000
67004133010-002	M.K. FERGUSEN		315,500
67004133020-000	M.K. FERGUSEN		2,500
67004132855-002	FRANCIS HOWELL		389,000
67004132890-009	M.K. FERGUSEN		50,000
67095018237-000	M.K. FERGUSEN		337,000
		TOTAL	172,892,300
WATER DISTICT #2			
	24" EAST LINE		7,785,000
	24" WEST LINE		58,809,000
	BYPASS		0
		TOTAL	66,594,000
WATER DISTICT #2			
	NEW MELLE	TOTAL	5,789,000
NATIONAL GUARD AREA			
	BLGD S-61		0
	WASH RACK		0
		TOTAL	0
TOTAL WATER SALES	**********		245,275,300

ST. CHARLES COUNTY WATER DEPARTMENT

INVENTORY OF CHEMICALS

		LIME			CHLORIN
PREVIOUS BALANCE		245643			4938
RECIEVED	DATE	INV. #		DATE	INV. #	
	12-3	322293.	52620	12-5	962368	8000
	12-5	322698.	49620	12-16	962411	8000
	12-10	323261.	48580	12-30	962474	8000
	12-12	323846.	48300			
	12-17	324516.	47520			
	12-20	324848.	48020			
	12-24	325569.	50060			
	12-26	325773.	47680			
	12-31	326499.	49040			
	**********		441440	**********		24000
	TOTAL AMOUNT		687083			28938
	USED		386500			16070
	BALANCE		300583			12868
	#/1000 GALLON		1.36			0.057
	PARTS/MILLION		163			6.78
	AVG. #/DAY		12468			518
	# USED Y TO D		5339219.			221078.

St. Louis County Department of Health

SAMPLE ANALYSIS REQUEST

Date Received 12/6/96

ATTENTION: St. Louis County Department of Health
Environmental Health Laboratories

SAMPLE NUMBER: PWSD I.D. 6079507 - St. Charles County Water

DATE COLLECTED: 11-01 — 11-30-96

COLLECTED BY: First Shift Operator

ADDRESS: 1635 South HWY 94

Defiance, MO Zip Code 63341

TELEPHONE NO.: (314) 926-9222 (Plant 447-0510) Thomas Aaron

ANALYSIS REQUESTED:

X GROSS ALPHA X GROSS BETA ____ RA-226 ____ RA-228

____ OTHER (Identify) RAW

FOR LABORATORY USE ONLY SCR96-12

	RESULTS (pCi/L)	*MDL (pCi/L) 12/18/96
Gross Alpha	3.0 ± 1.3	1.0
Gross Beta	5.2 ± 1.0	1.0
Radium 226		0.1
Radium 228		1.0
Other (Identify)		

Procedure used: Measurement of Radioactivity in Drinking Water
EPA-600/4-80-032

COMMENTS: * MDL is the minimum detectable limit.

ANALYSIS PERFORMED BY: ST. LOUIS COUNTY DEPARTMENT OF HEALTH
ENVIRONMENTAL HEALTH LABORATORIES
111 So. Meramec - 5th floor
Clayton, MO 63105
(314) 854-6324

EL-AB/RAD-WTR/SW

St. Louis County Department of Health

SAMPLE ANALYSIS REQUEST

Date Received 12/06/96

ATTENTION: St. Louis County Department of Health
Environmental Health Laboratories

SAMPLE NUMBER: PWSD I.D. 6079507 - St. Charles County Water

DATE COLLECTED: 11-01 - 11-30 - 96

COLLECTED BY: First Shift Operator

ADDRESS: 1635 South HWY 94

Defiance, MO Zip Code 63341

TELEPHONE NO.: (314) 926-9222 (Plant 447-0510) Thomas Aaron

ANALYSIS REQUESTED:

X GROSS ALPHA X GROSS BETA ____ RA-226 ____ RA-228

____ OTHER (Identify) FINISH

FOR LABORATORY USE ONLY SCT96-12

	RESULTS (pCi/L)	*MDL (pCi/L) 12/18/96
Gross Alpha	< 1.0	1.0
Gross Beta	5.3 ± 1.1	1.0
Radium 226		0.1
Radium 228		1.0
Other (Identify)		

Procedure used: Measurement of Radioactivity in Drinking Water
EPA-600/4-80-032

COMMENTS: * MDL is the minimum detectable limit.

ANALYSIS PERFORMED BY: ST. LOUIS COUNTY DEPARTMENT OF HEALTH
ENVIRONMENTAL HEALTH LABORATORIES
111 So. Meramec - 5th floor
Clayton, MO 63105
(314) 854-6324

LAB/RAD-WTR/596

MONTHLY REPORT

FEBRUARY 1997

BY

Stanley Remington

Consulting Hydrologist

I. CHEMICAL ANALYSES

The results of the sampling from well PW-4 have been received and are appended. This well was sampled on January 13, 1997. I sampled only for gross alpha and beta, total uranium and for nitroaromatics. The results show normal readings, all are within historical ranges and all are below the NPDES limits.

Also appended are the results from the testing of the raw and treated waters from the St. Charles County water treatment plant. These analyses were for gross alpha and beta, and were performed by the St. Louis County Department of Health, Environmental Health Laboratory. Again all the results show that the readings were well below the NPDES limits. The sampling was done on January 9, 1997.

I sampled well PW-8 on February 24, 1997, but the results have not yet been received.

The quarterly Environmental data summary for the Fourth Quarter 1996 has been received. Appended are the first six pages of the report entitled "Distribution". All of the analyses are available from the County and me for anyone interested in any specific results. The Department of Energy noted that a 1996 sample value (130 mg/l) was a new historic high from well number PW-2. They said that the value was determined to be statistically insignificant (less than the mean plus 3 standard deviations). The reading is below the drinking water standard of 250 mg/l. Any indications of subsequent sulfate increases will be reported.

II. CONTRACT

My contract with St. Charles County expires on March 31, 1997. According to the terms of the contract, it can be renewed with the agreement of both parties. I have requested that my contract be renewed until March 31, 1998.

III. REPORT

The County asked me to review the parts of a report by the U. S. Army Corps of Engineers entitled, "Missouri River Mitigation Project, Weldon Spring Site Miles 44.8 to 49.2" dated February 1997. The report deals with a proposal to turn the area in and around the St. Charles County Well Field into a wetlands area. I made a separate letter stating my opinions as to what changes, if any, this would have on the County's pumping wells and our four observation wells. The letter is appended.

IV. FUTURE PLANS

I will sample the quarterly number of wells with the Department of Energy sometime in mid-March 1997.

V. MISCELLANEOUS

Enclosed is the monthly sales report and monthly inventory of chemicals for the Weldon Spring treatment plant site for the month of January 1997.

956 Broadmoor Lane
St. Charles, MO 63301-6217
February 26, 1997

Joe R. Nichols
County Engineer
201 North Second St. - Suite 429
St. Charles, MO 63301

Dear Joe:

I have reviewed that portion of the report entitled, Missouri River Mitigation Project, Weldon Spring Site, Missouri River Mile 44.8 to 49.2, wtitten by the U.S. Corps of Engineers, dated February 1997 for St. Charles County. The report deals with the establishment of wetlands at the area in and surrounding the St. Charles County Well Field at Weldon Spring.

As stated in the report, berms would be constructed around each of our pumping wells to protect them from flooding from the proposed wetlands development. As I discussed with you, I would not be in favor of such a plan since I believe that the water on the outside of the berms would leak into the protected area because of the hydraulic differential of the heads inside and out. Eventually the heads would seek the same levels. This, of course, would negate any flooding protection and could also adversely affect the groundwater quality from the wells.

As we also discussed, if the Corps of Engineers would build up a landfill at a minimum of 300 feet in diameter around each of the pumping wells to a height of at least one foot above the projected 12 to 18 inches proposed depth of the wetlands, then I would agree with you that this should adequately protect the wells, both from flooding and the groundwater quality.

I noticed that the Corps provided protection for our four RMW observation wells. This we should insit on. Any arrangements for the protection of the Department of Energy's observation wells can be done between those two agencies.

So in conclusion, if the Corps of Engineers provides landfills around each of our pumping wells and adequate protection to our four observation wells, in addition to providing adequate access to our wells, I see no reason to object to the mitigation of this area into a wetlands.

Sincerely,

Stanley M. Remington
Consulting Hydrologist

AMERICAN TECHNICAL & ANALYTICAL SERVICES, INC.

875 Fee Fee Road • Maryland Heights, MO 63043 • (314) 434-4570 • FAX (314) 434-0080

February 3, 1997

Stanley M. Remington
956 Broadmoor Lane
St. Charles, MO 63301

RE: ATAS #17867.01
Weldon Spring

Dear Mr. Remington:

Enclosed is the analytical report for the sample received in our laboratory on January 13, 1997.

If, in your review, you should have any questions or require additional information, please call Rhonda Tinker, Assistant Project Manager, or me at (314) 434-4570.

Thank you for choosing ATAS for your analytical needs.

Sincerely,

Richard H. Mannz
Project Manager

Enclosures

RHM/dms

ATAS 875 Fee Fee Road • Maryland Heights, MO 63043 • (314) 434-4570 - FAX (314) 434-0080

CLIENT: STANLEY M. REMINGTON
919 BROADMOOR LANE
ST. CHARLES, MO 63301
ATTN: STANLEY M. REMINGTON

REPORT: 1786701RA(269)
DATE : 02-03-97

SAMPLE MATRIX : WATER
ATAS EPISODE : #17867
DATE SUBMITTED: 01-13-97
PROJECT REF. : WELDON SPRING

RESULTS REPORTED IN pCi/L

CLIENT ID	ATAS ID	RADIONUCLIDE	RESULT
PW-4	17867.01	GROSS ALPHA	1 +/- 2*
PW-4	17867.01	GROSS BETA	12 +/- 7*
PW-4	17867.01	TOTAL URANIUM (mg/L)	<0.005

* VARIABILITY OF THE RADIOACTIVE DISINTERGRATION PROCESS (COUNTING ERROR) AT THE 95% CONFIDENCE LEVEL, 1.96σ.
pCi/L= PICOCURIES PER LITER
mg/L = PARTS PER MILLION(PPM)

ATAS 875 Fee Fee Road • Maryland Heights, MO 63043 • (314) 434-4570 · FAX (314) 434-0080

CLIENT: STANLEY M. REMINGTON
956 BROADMOOR LANE
ST. CHARLES, MO 63301
ATTN: STANLEY M. REMINGTON

REPORT: 1786701EX(269)

DATE : 02-03-97

SAMPLE MATRIX : WATER
ATAS # : 17867.01
DATE SUBMITTED: 01-13-97
DATE ANALYZED : 01-16-97
METHOD REF. : SW846-8330, EPA METHODOLOGY
PROJECT : WELDON SPRING
SAMPLE ID : PW-4

RESULTS REPORTED IN ug/L OR PARTS PER BILLION(PPB)

EXPLOSIVE	QUANTITATION LIMIT	RESULTS
HMX	13.0	ND
RDX	14.0	ND
1,3,5-TNB	7.3	ND
TETRYL	10.0	ND
1,3-DNB	4.0	ND
NITROBENZENE	6.4	ND
2,6 DNT	7.0	ND
2,4 DNT	9.4	ND
2,4,6 TNT	5.7	ND
o-NITROTOLUENE	12.0	ND
p-NITROTOLUENE	8.0	ND
m-NITROTOLUENE	7.9	ND

ND= NOT DETECTED ABOVE QUANTITATION LIMIT

ATAS 875 Fee Fee Road • Maryland Heights, MO 63043 • (314) 434-4570 - FAX (314) 434-0080

CLIENT: STANLEY M. REMINGTON
956 BROADMOOR LANE
ST. CHARLES, MO 63301
ATTN: STANLEY M. REMINGTON

REPORT: 1786701EX(269)

DATE : 02-03-97

SAMPLE MATRIX : WATER
ATAS # : MS/MSD
DATE SUBMITTED: 01-13-97
DATE ANALYZED : 01-16-97
METHOD REF. : SW846-8330, EPA METHODOLOGY
PROJECT : WELDON SPRING
SAMPLE ID : MS/MSD

COMPOUND	MS PERCENT RECOVERY	MSD PERCENT RECOVERY	RPD
HMX	111 %	109 %	2 %
RDX	94 %	91 %	3 %
1,3,5-TNB	94 %	94 %	0 %
TETRYL	91 %	89 %	2 %
1,3-DNB	87 %	87 %	1 %
TNT	89 %	89 %	0 %
NITROBENZENE	97 %	96 %	1 %
2,6 DNT	98 %	97 %	2 %
2,4 DNT	90 %	87 %	3 %
o-NITROTOLUENE	96 %	94 %	2 %
p-NITROTOLUENE	95 %	93 %	3 %
m-NITROTOLUENE	108 %	105 %	3 %

AMERICAN TECHNICAL & ANALYTICAL SERVICES, Inc.

875 Fee Fee Road • Maryland Heights, MO 63043-3211 • Office (314) 434-4570 • FAX (314) 434-0080

PAGE ____ OF ____

CHAIN OF CUSTODY RECORD

ATAS Client Name: STAN REMINGTON

Project Name: WELDON SPRING

Project #:

Form Completed By: STAN

PO #:

Sample ID	Sample Date	Sample Time	Sample Matrix	Grab	Comp	No. of Containers	Type of Analysis: Nitrate	Gross α	Gross β	Total U	TSS	Preservative: Ice / Chemical (see below)	Remarks	Lab Use Only: Initials / Date / Location/Temp
PW-4	1/13/97	0830		X			X	X	X	X				LM 1-13-97 AL-BA ~40° 17867.01
TREAT. PLANT	"	0800			X						X			

Relinquished by:	Received by:	Relinquished by:	Received by:
Signature: STAN REMINGTON	Signature: WALTER DOISY	Signature:	Signature:
Printed Name: ST. CHAS. COUNTY	Printed Name: ATAS	Printed Name:	Printed Name:
Firm: JAN. 13, 1997 1035	Firm: 1/13/97 1036	Firm:	Firm:
Date/Time	Date/Time	Date/Time	Date/Time

Turnaround Requirements

____ 1 to 2 working days

____ 3 working days

____ 5 working days

____ 10 working days

____ 15 working days

Preservative codes

A - none
B - HNO_3
C - H_2SO_4
D - NaOH
E - HCl
F - _____

SEND RESULTS TO (Name & Company): _____

Original to ATAS/Copy to Client

Department of Energy
Oak Ridge Operations
Weldon Spring Site
Remedial Action Project Office
7295 Highway 94 South
St. Charles, Missouri 63304

February 7, 1997

DISTRIBUTION:

QUARTERLY ENVIRONMENTAL DATA SUMMARY FOR FOURTH QUARTER 1996

In support of the Weldon Spring Site Remedial Action Project Federal Facilities Agreement, we submit herewith the Quarterly Environmental Data Summary (QEDS) for the fourth quarter of 1996.

This letter and its enclosures comprise the summary. The data were received from the contract laboratories, verified by the Weldon Spring Site verification group and, with the exception of air monitoring data, merged into the data base during the fourth quarter of 1996. The air monitoring data are the most recent complete sets of quarterly data. Air data are not stored in the data base.

Significant data, defined as data values that have exceeded defined "above normal" values, are discussed for Environmental Monitoring Plan (EMP) generated data only. In accordance with the project's Environmental Safety and Health procedures, above-normal values are based on historic high values, DOE Derived Concentration Guides (DCGs), National Pollutant Discharge Elimination System (NPDES) limits, and other guidelines. The procedures also establish actions to be taken in the event that above-normal data occur.

All data received and verified during the fourth quarter were within a permissible range of variability with the exception of those detailed below. Above normal occurrences are cited for groundwater data and NPDES. There were none for air, surface water or springs.

The following discussion offers a brief summary of the above-normal data merged during the fourth quarter, and updates on above normal data reported in the past. The enclosed tables present the most recent air data and all the data merged into the data base during the fourth quarter 1996 for groundwater, NPDES, surface water, and springs.

NPDES

Above normals for NPDES outfalls during the fourth quarter of 1996 are outlined below.

• NP-0002-110796

The November 7, 1996 sample collected at outfall NP-0002 had results that were above baseline values for certain parameters. The parameters were arsenic (20.5 mg/l, baseline of 6.20 mg/l), chromium (46 mg/l, baseline of 12.24 mg/l), lead (39.3 mg/l, baseline of 23.8 mg/l) and radium-226 (3.94 pCi/l, baseline of 1.41 pCi/l). These are not permitted parameters and were not above permit notification levels (100 mg/l for the metals). Baseline monitoring was conducted at the three major storm water outfalls before the start of foundation and contaminated soil removal to help monitor the effects of site activities. The baseline comparison value is the average plus two standard deviations of the baseline data. The elevated levels are believed to be the result of higher than normal total suspended solids in the water in combination with upstream remediation efforts. Subsequent sampling on December 2, 1996 showed levels returned to below the baseline values. Periodic monitoring for these parameters will continue.

• NP-0002-102196

Settleable solids for a sample collected on October 21, 1996 were 16 ml/l/hr. The permit limit is 1.0 ml/l/hr. The noncompliance is believed to be the result of storm water that was not directed through the sedimentation basin reaching the outfall and accumulated sediment behind the weir. The storm water has been redirected and the sediment has been removed from behind the weir. Subsequent samples collected on October 22, November 7, and December 2, 1996 were in compliance with the permit limit.

• NP-0003-110796

The November 7, 1996 sample collected at outfall NP-0003 had results that were above baseline values for certain parameters. The parameters were arsenic (16 mg/l, baseline of 6.52 mg/l), chromium (39 mg/l, baseline of 11.65 mg/l), lead (26.7 mg/l, baseline of 12.62 mg/l) and radium-226 (2.26 pCi/l, baseline of 1.16 pCi/l). These are not permitted parameters and were not above permit notification levels (100 mg/l for the metals). The elevated levels are believed to be the result of higher than normal total suspended solids in the water in combination with upstream remediation efforts. Subsequent sampling on December 2, 1996 showed levels returned to below the baseline values. Periodic monitoring for these parameters will continue.

• NP-0005-110796

The November 7, 1996 sample collected at outfall NP-0005 had a result for radium-226 (2.26 pCi/l) which was above the baseline value of 1.06 pCi/l. Radium - 226 is not a permitted parameter and there is no permit notification level. The elevated level is believed to be the result of higher than normal total suspended solids in the water in combination with upstream remediation efforts. Monitoring for radium was not conducted in December but will be conducted during January of 1997. Periodic monitoring for radium will continue.

The analytical results for the NPDES outfalls are reported in the quarterly discharge monitoring report as well as in this report.

GROUNDWATER

Weldon Spring Chemical Plant Site

Site Water Treatment Plant and Temporary Storage Area

- GW-2037-Q396 and GW-2037-103196

The Volatile Organic Compound (VOC) trichloroethene was detected at 810 ug/l in September, 1996 (GW-2037-Q396) and at 1100 ug/l in October, 1996 (GW-2037-

- GW-2038-Q396 and GW-2038-Q396RE

The third quarter lead concentration was reported as 10.3 ug/l which is above-baseline (1.65 ug/l) for this location. Laboratory error was suspected since the reported value was greater than the mean plus five standard deviations. The sample was re-analyzed (GW-2038-Q396RE) and the value was reported as below the detection limit of 1 ug/l.

- GW-2038-Q396, GW-2038-103196-A and GW-2038-103196-B

VOC's were initially monitored (and subsequently detected) in samples collected during the second quarter of 1996 to identify potential contaminant migration due to disturbance of discarded drums in the southeast corner of Raffinate Pit 4, and to investigate the effects of reported hexane detections in sludges from Raffinate pit 3. The VOC's trichloroethene (TCE) and 1,2-dichloroethene (DCE) were again detected at the MW-2038 groundwater monitoring location during the third quarter of 1996. TCE concentrations of 1050 ug/l for sample GW-2038-Q396 and 1000 ug/l for sample GW-2038-103196-A were reported, both of which are above the MCL of 5 ug/l. Sample GW-2038-103196-B was collected following an additional purging of three well volumes immediately after collecting sample GW-2038-103196-A in order to gauge the effectiveness of the standard WSSRAP micro-purging and determine whether the three volumes method of well evacuation is more appropriate for the collection of VOC samples. A TCE analytical result of 910 ug/l, which is within ten percent of the micropurged sample, was reported. DCE detected levels were below the MCL of 70 ug/l for both samples. The VOC impact investigation is ongoing. VOCs will be monitored monthly and other investigation requirements are being developed.

- GW-2040-Q396

The third quarter, 1996 sample lead value (6.4 ug/l) was above baseline (3.3 ug/l) but below the drinking water quality standard of 15 ug/l. The second quarter sample data also indicated that this location was above baseline for lead (13.1 ug/l.) The reported chromium concentration (19.9 ug/l) for the third quarter was also

above the baseline of 14.1 ug/l for this location. Monitoring well MW-2040 is located on the north side of the Site Water Treatment Plant Equalization Basin. Three additional wells which monitor the Equalization Basin, and are 100 to 150 feet down-gradient and cross-gradient from MW-2040, show no lead impact. The source of the elevated lead values is unknown. Treatment plant influent lead values were not elevated and no other anomalous basin leachate values (such as elevated uranium) were identified. The fourth quarter sample (data not yet available) was collected following three full well volumes purged to reduce the potential for collection of water which has been in prolonged contact with stainless steel well materials. If above-baseline values persist, further investigation of potential sources will be conducted.

• GW-2042-Q396

The third quarter lead (3.4 ug/l) and chloride (15.8 mg/l) results were above baselines of 2.4 ug/l and 11.3 mg/l, respectively. Re-analysis was requested and the sample was reported to have no detection for lead (< 1.0 ug/l), but chloride (19.5 mg/l) was, as previously reported, above baseline. The source of elevated chloride is suspected to be de-icing agents. If the value shows no indication of decreasing in future sample results an investigation will be initiated.

Weldon Spring Chemical Plant and Raffinate Pits

• GW-2013-092496 and GW-2013-110496

The VOC 1,2-dichloroethene was detected in both noted samples from this location at 16 ug/l. The VOC source at this sampling location is suspected to differ from that which impacts the area around Raffinate Pits 3 and 4 since TCE is not the primary VOC contaminant. However it has been included in the site-wide VOC groundwater investigation and VOCs will be sampled monthly.

• GW-3025-103196

Trichloroethene (TCE) was detected in this sample at 29.0 mg/l, which exceeds the MCL of 5 mg/l. TCE was first detected at this location in April, 1996. This monitoring well is along the east side of Raffinate Pit 3 and is included in the current VOC investigation described in the previous paragraph.

<u>Weldon Spring Quarry Site</u>

Quarry Water Treatment Plant

• GW-1035-Q496

The fourth quarter chloride value of 11.9 mg/l is less than the third quarter value of 28.0 mg/l, indicating that the chloride concentration is continuing to decrease as in the previous quarter's comparisons; however, the levels remain above the baseline value of 6.82 mg/l. Chromium (8.0 ug/l) and lead (2.9 ug/l) were also above

baselines (chromium = 4.81 ug/l and lead = 1.59 ug/l) for this quarter, most likely as a result of metals leaching from natural sources or the stainless steel well materials being in contact with chloride impacted water. Continued decreases in chloride and related chromium and lead concentrations are expected; subsequent samples will be reviewed to monitor this location.

• GW-1036-Q296 and GW-1036-Q396

The chloride concentration of 518 mg/l for the second quarter 1996 was the highest recorded for this location. Third quarter data (130 mg/l) indicates that the chloride concentration remains above the baseline of 102 mg/l as it has for several quarters, but that it is significantly decreasing. The third quarter chromium concentration of 47.7 ug/l was also above baseline (7.57 ug/l). The elevated level is likely the result of solutioning of metals related to the chloride impact. The quarry water treatment plant did not receive influent for a great part of 1996, making it unlikely that the high levels were from contaminated water introduced to the equalization basin. The chloride impact, and the subsequent metals leaching, was most likely due to the use of hydrochloric acid for cleaning equipment at the quarry decon pad. Cracks in the decon pad, which may have allowed acidified water to migrate from the decon sump, were repaired in August, 1996. The chloride and chromium values are expected to decrease, as a result of the repairs, in subsequent samples.

• GW-1037-Q396

Third quarter, 1996 total uranium (7.66 pCi/l) was reported as above the baseline of 3.08 pCi/l. Fourth quarter analytical results are not yet available, but on-site KPA analysis reported total uranium activity of 1.0 pCi/l. The fourth quarter, off-site total uranium analytical results will be reviewed when available and will be reported if the result does not closely agree with KPA results.

• GW-1040-Q296 and GW-1040-Q396

Two consecutive new chloride highs (above the baseline of 10.9 mg/l) for this location were reported in the previous QEDS. The chloride concentration has decreased from 25.8 mg/l in the second quarter sample to 21 mg/l in the third quarter sample. The elevated chloride values are likely due to HCl used in the quarry decontamination area during remedial action efforts. Cracks in the decontamination pad at the quarry were repaired in August, 1996 and only potable water was used at the pad until the repairs were completed. Subsequent data is expected to show continued decreases in chloride. Sulfate was also elevated above baseline (114 mg/l) for the second and third quarters (274 and and 190 mg/l respectively). Monitoring will continue for these parameters.

Quarry Vicinity

• GW-1005-B596

A new historic high for total uranium of 5380 pCi/l was reported for the fifth bimonthly, 1996 sample from this location. This well has been dry since mid-1995 due to groundwater level decreases resulting from Quarry Pond dewatering. It is

possible that contaminated residual sediments which have accumulated in bedrock conduits are being remobilized as groundwater levels rise and recharge the well. If this is the source, subsequent samples should show decreasing total uranium activity.

St. Charles County Well Field

- GW-PW02-Q396

The third quarter, 1996 sample sulfate value (130 mg/l) was a new historic high but below the drinking water standard of 250 mg/l. The value was determined to be statistically insignificant (less than the mean plus 3 standard deviations) and indications of any subsequent sulfate increases will be reported.

In Conclusion

The previously described data were highlighted as being above prescribed baseline values, varying from historical ranges, or being above regulatory limits. As a result, the subject locations will receive more focused attention from the Weldon Spring Site Remedial Action Project Environmental Protection Group. Continuous trends are monitored to determine the need for additional possible action. Except for the highlighted data, all other indicators subject to reporting in the QEDS were within historic ranges or below reporting criteria.

If you have any questions, please contact the WSSRAP Community Relations Department at (314) 441-8086, ext. 7079.

Sincerely,

Jerry S. Van Fossen

Jerry S. Van Fossen
Deputy Project Manager
Weldon Spring Site
Remedial Action Project

Enclosure:
As stated

St. Louis County Department of Health

SAMPLE ANALYSIS REQUEST

Date Received 01/09/97

Results 1/31/97

ATTENTION: St. Louis County Department of Health
Environmental Health Laboratories

SAMPLE NUMBER: PWSD I.D. 6079507 - St. Charles County Water

DATE COLLECTED: 12/01 TO 12/31/96

COLLECTED BY: First Shift Operator

ADDRESS: 1635 South HWY 94

Defiance, MO Zip Code 63341

TELEPHONE NO.: (314) 926-9222 (Plant 447-0510) Thomas Aaron

ANALYSIS REQUESTED: RAW WATER

X GROSS ALPHA X GROSS BETA _____ RA-226 _____ RA-228

_____ OTHER (Identify) _____

SLR97-1

FOR LABORATORY USE ONLY

	RESULTS (pCi/L)	*MDL (pCi/L)
Gross Alpha	2.5 ± 1.2	1.0
Gross Beta	5.8 ± 1.1	1.0
Radium 226		0.1
Radium 228		1.0
Other (Identify)		

1/28/97 MM JH LSH

Procedure used: Measurement of Radioactivity in Drinking Water
EPA-600/4-80-032

COMMENTS: * MDL is the minimum detectable limit.

ANALYSIS PERFORMED BY: ST. LOUIS COUNTY DEPARTMENT OF HEALTH
ENVIRONMENTAL HEALTH LABORATORIES
111 So. Meramec - 5th floor
Clayton, MO 63105
(314) 854-6324

ELAB/RAD-WTR/5/96

St. Louis County Department of Health

SAMPLE ANALYSIS REQUEST

Date Received 01/09/97

Results 1/31/97 ✓

ATTENTION: St. Louis County Department of Health
Environmental Health Laboratories

SAMPLE NUMBER: PWSD I.D. 6079507 - St. Charles County Water

DATE COLLECTED: 12/01/96 TO 12/31/96

COLLECTED BY: First Shift Operator

ADDRESS: 1635 South HWY 94

Defiance, MO Zip Code 63341

TELEPHONE NO.: (314) 926-9222 (Plant 447-0510) Thomas Aaron

ANALYSIS REQUESTED: FINISHED WATER

X GROSS ALPHA X GROSS BETA _____ RA-226 _____ RA-228

_____ OTHER (Identify) _____

SCT 97-1

FOR LABORATORY USE ONLY

	RESULTS (pCi/L)	*MDL (pCi/L)
Gross Alpha	< 1.0	1.0
Gross Beta	3.9 ± 1.0	1.0
Radium 226		0.1
Radium 228		1.0
Other (Identify)		

1/28/97 per III

Procedure used: Measurement of Radioactivity in Drinking Water
EPA-600/4-80-032

COMMENTS: * MDL is the minimum detectable limit.

ANALYSIS PERFORMED BY: ST. LOUIS COUNTY DEPARTMENT OF HEALTH
ENVIRONMENTAL HEALTH LABORATORIES
111 So. Meramec - 5th floor
Clayton, MO 63105
(314) 854-6324

ELAB/RAD-WTR/596

St. Charles County Water Department
1635 South Highway 94
Defiance, Missouri 63341
(314)-926-9222
Fax 926-8911

Jan-97 Water Sales Report

Date of Report **02/03/97**

Water Production		291,711,000
Washwater Used		5,414,000
Delivered to System	**Total——**	**286,297,000**
Mo. American	Booster Station	190,000,000**
4132835-007	Francis Howell	40,000
4132850-007	Mo. Hwys & Trans.	3,500
4133000-004	M. K. Fergusen	638,000
4133040-015	M. K. Fergusen	(1,156,000)
4133010-002	M. K. Fergusen	202,000
4133020-000	M, K. Fergusen	34,500
4132855-002	Francis Howell	178,000
4132890-009	M. K. Fergusen	39,000
95018237-000	M. K. Fergusen	101,700
4132851-006	Mo. Hwys & Trans.	6,800
	Total——	**190,102,000**
Water Dist. #2	24" East Line	78,971,000
	24" West Line	0,000
	Bypass	0,000
	Total——	**78,971,000**
Water Dist. #2	New Melle **Total——**	**6,167,000**
National Guard	Bigd S-61	0,000
Area	Wash Rack	0,000
	Total——	**0,000**
Total Water Sales	**********	275,138,000

** Estimated

St. Charles County Water Department
1635 South Highway 94
Defiance, Missouri 63341
(314)-926-9222
Fax 926-8911

Monthly Inventory of Chemicals

		LIME			**CL2**
Date	Inv.#		Date	Inv.#	
12-31	**Balan.**	**300583**	**12-31**	**Balan.**	**12868**
1-2	326793	50000	1-14	97-149	8000
1-8	327784	49120	1-29	97-211	8000
1-9	327963	48540			
1-14	328717	49640			
1-16	329094	48820			
1-21	329910	49400			
1-23	330171	48980			
1-29	331174	49360			
1-30	331371	49960			
*****	******	**443820**	******	******	**16000**
Total	On Hand	794403			28868
Used		417061			17070
Balan.	**1-31**	**327342**			**11798**
#/1000	Gallon	1.12			0.0404
PPM		159			4.84
Avg	Day	13454			550.65
Y to D		**417061**			**17070**

MISSOURI-AMERICAN WATER COMPANY
ST. CHARLES DISTRICT
(As adjusted from St. Charles County)

JANUARY	1993 ACT.	1994 ACT.	1995 ACT.	1996 ACT.	1997 ACT.	5 YEAR AVG.	1997 BGT.	VARIANCE 1997 TO 5 YR AVG	VARIANCE 1997 ACT TO BUDGET	97 ACT VS 97 BUDGET MO-TO-DATE
1	5.438	4.685	6.856	6.036	6.636	5.930	6.155	0.706	0.480	0.480
2	5.438	4.685	6.856	5.911	6.355	5.849	6.155	0.506	0.199	0.680
3	5.438	4.686	6.883	5.689	6.603	5.820	6.155	0.783	0.447	1.127
4	5.438	4.499	6.462	5.589	6.603	5.718	6.155	0.885	0.447	1.575
5	4.882	3.936	6.750	5.646	6.603	5.363	6.155	1.239	0.447	2.022
6	4.552	3.936	7.202	5.646	5.815	5.430	6.155	0.385	(0.341)	1.682
7	5.227	3.971	7.202	5.645	5.919	5.593	6.155	0.326	(0.237)	1.445
8	5.605	4.707	7.202	3.772	5.459	5.349	6.155	0.110	(0.697)	0.749
9	5.175	4.708	6.456	5.288	5.892	5.504	6.155	0.388	(0.264)	0.485
10	5.175	4.708	6.327	5.577	6.204	5.598	6.155	0.606	0.048	0.534
11	5.176	4.065	6.374	5.584	6.204	5.479	6.156	0.725	0.048	0.582
12	4.566	3.523	6.518	5.699	6.205	5.303	6.155	0.902	0.049	0.631
13	4.522	3.999	6.661	5.699	5.919	5.360	6.155	0.559	(0.237)	0.396
14	4.590	4.253	6.661	5.698	5.839	5.408	6.155	0.431	(0.317)	0.078
15	4.692	4.474	6.661	5.290	6.366	5.496	6.155	0.868	0.209	0.288
16	5.020	4.474	6.782	5.620	5.774	5.534	6.155	0.240	(0.382)	(0.094)
17	5.020	4.475	6.098	6.528	6.095	6.043	6.155	0.052	(0.061)	(0.154)
18	5.020	4.123	6.132	7.382	6.095	5.760	6.155	0.344	(0.061)	(0.215)
19	5.985	4.459	5.608	5.895	6.095	5.608	6.155	0.497	(0.061)	(0.275)
20	4.584	4.416	6.356	5.895	6.471	5.544	6.155	0.926	0.315	0.040
21	4.768	7.784	6.356	5.896	6.216	6.204	6.155	0.012	0.060	0.100
22	4.461	5.138	6.356	4.160	6.049	5.233	6.156	0.816	(0.107)	(0.008)
23	5.536	5.138	5.591	5.148	6.105	5.504	6.155	0.601	(0.051)	(0.057)
24	5.536	5.138	5.874	4.776	6.302	5.525	6.155	0.777	0.146	0.090
25	5.537	5.731	5.903	4.681	6.302	5.831	6.155	0.671	0.146	0.236
26	5.516	6.966	5.927	4.383	6.302	5.819	6.155	0.483	0.146	0.383
27	5.731	5.527	6.439	4.383	5.892	5.554	6.155	0.137	(0.464)	(0.081)
28	5.013	4.569	6.439	4.383	6.067	5.294	6.155	0.773	(0.089)	(0.169)
29	5.244	5.259	6.439	5.128	5.689	5.552	6.155	0.137	(0.467)	(0.636)
30	5.314	5.259	6.230	4.104	5.735	5.328	6.155	0.406	(0.421)	(1.056)
31	5.314	5.259	6.177	4.427	6.394	5.514	6.155	0.880	0.238	(0.818)
TOTALS	159.515	148.539	198.578	167.57	190.000	172.838	190.818	17.162	(0.818)	(0.818)
BEFORE METERS				1.145	0.102					
GRAND TOTAL				168.71	190.102					

Francis Howell	67004132835-00 7	46000
MO Hwy & Trans	67004132850-00 7	3500
MK Ferguson	67004133000-00 4	639000
MK Ferguson	67004133040-01 5	(1,156,900)
MK Ferguson	67004133010-00 2	202000
MK Ferguson	67004133020-00 0	34500
Francis Howell	67004132855-00 2	178000
MK Ferguson	67004132890-00 9	39000
MK Ferguson	67095018237-00 0	110700
MO Hwy & Trans	67004132851-006	6800
TOTAL		101600 GALLONS
		0.102 MGs

Post-it® Fax Note 7671 | Date 2/3/97 | # of pages ▸ 1
To TOM AARON | From KATHY
Co./Dept. | Co. MO-AM
Phone # per fax | Phone #
Fax # | Fax #

* Est was wrong for 3 month

MONTHLY REPORT

MARCH 1997

BY

Stanley Remington

Consulting Hydrologist

I. CHEMICAL ANALYSIS

The results of testing pumping well PW-8 was received and is appended. This sampling was done on February 24, 1997. Wells PW-8 and PW-9 are the two pumping wells nearest the old quarry and would be the first to become contaminated if ever the residual contamination from the quarry ever reached the St. Charles County well field. The results of the testing on well PW-8 showed a total uranium contest of less than 0.005 mg/L and readings of 3 +/- pCi/L of gross alpha and 5 +/- pCi/L of gross beta. This indicates that no radioactive material has ever reached the County well field. Also non-detection of explosives (TNT and DNT) show that these chemical parameters have also never reached the well field. A treated sample of water from the raffinate pits at the Chemical Plant Site was done March 6, 1997. The results are appended. Again the treatment of the contaminated waters in the raffinate pits shows that it is effective.

The quarterly sampling with the Department of Energy was carried out on March 19, 1997. I had planned on sampling our observation well RMW-2 and pumping well PW-9, but recent heavy rains at the time prevented us from getting into the location of RMW-2. So instead I sampled PW-8 and PW-9. The results have not yet been received.

II. PROPOSED WETLANDS PROJECT

There have been two letters written by the St. Charles County Executive outlining concerns about the effects that the proposed wetlands might have on the migration or ability to monitor the migration of contaminants from the Weldon Spring Site

to the St. Charles County well field. I am enclosing copies of these letters written by Mr. Joe Ortwerth to Mr. Jerry Van Fossen of the Department of Energy and to Mr. Glen Covington of the U. S. Corps of Engineers. These are for information only. They show the present status of the proposed project.

III. REPORTS

Appended is a copy of the Department of Natural Resources Quarterly Report. The report summarized the activities and follow-up of the issues associated with the Missouri Department of Natural Resources (MDNR) oversight role at the Weldon Spring Site Remedial Action Project (WSSRAP). The time period covered is the fourth quarter of 1996.

IV. CONTRACT

My contract was renewed by the St. Charles Council at their meeting on March 25, 1997. The contract has been extended to March 31, 1998. The total amount of the contract was reduced from $55,000 to $40,000. This is because of the fewer chemical analyses that I am now conducting. This is also more in line with my actual yearly expenditures.

V. MISCELLANEOUS

Enclosed is the February 1997 Water Sales Report from the County's Water Department. Also enclosed are laboratory tests conducted by the St. Louis County Department of Health for the month of January 1997. This is for both the raw and treated water at the treatment plant.

AMERICAN TECHNICAL & ANALYTICAL SERVICES, INC.

875 Fee Fee Road • Maryland Heights, MO 63043 • (314) 434-4570 • FAX (314) 434-0090

March 12, 1997

Stanley M. Remington
956 Broadmoor Lane
St. Charles, MO 63301

RE: ATAS #18205.01
Weldon Spring

Dear Mr. Remington:

Enclosed is the analytical report for the sample received in our laboratory on February 24, 1997.

If, in your review, you should have any questions or require additional information, please call Rhonda Tinker, Assistant Project Manager, or me at (314) 434-4570.

Thank you for choosing ATAS for your analytical needs.

Sincerely,

Richard H Mannz
RH

Richard H. Mannz
Project Manager

Enclosures

RHM/dms

ATAS 875 Fee Fee Road • Maryland Heights, MO 63043 • (314) 434-4570 - FAX (314) 434-0080

CLIENT: STANLEY M. REMINGTON
956 BROADMOOR LANE
ST. CHARLES, MO 63301
ATTN: STANLEY M. REMINGTON

REPORT: 1820501EX(275)

DATE : 03-12-97

SAMPLE MATRIX : WATER
ATAS # : 18205.01
DATE SUBMITTED: 02-24-97
DATE ANALYZED : 03-01-97
METHOD REF. : SW846-8330, EPA METHODOLOGY
PROJECT : WELDON SPRING
SAMPLE ID : PW-8

RESULTS REPORTED IN ug/L OR PARTS PER BILLION(PPB)

EXPLOSIVE	QUANTITATION LIMIT	RESULTS
HMX	13.0	ND
RDX	14.0	ND
1,3,5-TNB	7.3	ND
TETRYL	10.0	ND
1,3-DNB	4.0	ND
NITROBENZENE	7.0	ND
2,6 DNT	9.4	ND
2,4 DNT	5.7	ND
2,4,6 TNT	6.4	ND
o-NITROTOLUENE	12.0	ND
p-NITROTOLUENE	8.0	ND
m-NITROTOLUENE	7.9	ND

ND= NOT DETECTED ABOVE QUANTITATION LIMIT

ATAS 875 Fee Fee Road • Maryland Heights, MO 63043 • (314) 434-4570 - FAX (314) 434-0080

CLIENT: STANLEY M. REMINGTON
956 BROADMOOR LANE
ST. CHARLES, MO 63301
ATTN: STANLEY M. REMINGTON

REPORT: 1820501EX(275)
DATE : 03-12-97

SAMPLE MATRIX : WATER
ATAS # : METHOD BLANK
DATE SUBMITTED: 02-24-97
DATE ANALYZED : 03-01-97
METHOD REF. : SW846-8330, EPA METHODOLOGY
PROJECT : WELDON SPRING
SAMPLE ID : METHOD BLANK

RESULTS REPORTED IN ug/L OR PARTS PER BILLION(PPB)

EXPLOSIVE	QUANTITATION LIMIT	RESULTS
HMX	13.0	ND
RDX	14.0	ND
1,3,5-TNB	7.3	ND
TETRYL	10.0	ND
1,3-DNB	4.0	ND
NITROBENZENE	7.0	ND
2,6 DNT	9.4	ND
2,4 DNT	5.7	ND
2,4,6 TNT	6.4	ND
o-NITROTOLUENE	12.0	ND
p-NITROTOLUENE	8.0	ND
m-NITROTOLUENE	7.9	ND

ND= NOT DETECTED ABOVE QUANTITATION LIMIT

ATAS 875 Fee Fee Road • Maryland Heights, MO 63043 • (314) 434-4570 - FAX (314) 434-0080

CLIENT: STANLEY M. REMINGTON
956 BROADMOOR LANE
ST. CHARLES, MO 63301
ATTN: STANLEY M. REMINGTON

REPORT: 1820501EX(275)
DATE : 03-12-97

SAMPLE MATRIX : WATER
ATAS # : LABORATORY CONTROL SAMPLE
DATE SUBMITTED: 02-24-97
DATE ANALYZED : 03-01-97
METHOD REF. : SW846-8330, EPA METHODOLOGY
PROJECT : WELDON SPRING
SAMPLE ID : LABORATORY CONTROL SAMPLE

COMPOUND	PERCENT RECOVERY
HMX	79 %
RDX	92 %
1,3,5-TNB	93 %
TETRYL	90 %
1,3-DNB	96 %
TNT	96 %
NITROBENZENE	100 %
2,6 DNT	106 %
2,4 DNT	96 %
o-NITROTOLUENE	96 %
p-NITROTOLUENE	97 %
m-NITROTOLUENE	102 %

ATAS 875 Fee Fee Road • Maryland Heights, MO 63043 • (314) 434-4570 - FAX (314) 434-0080

CLIENT: STANLEY M. REMINGTON
956 BROADMOOR LANE
ST. CHARLES, MO 63301
ATTN: STANLEY M. REMINGTON

REPORT: 1820501EX(275)

DATE : 03-12-97

SAMPLE MATRIX : WATER
ATAS EPISODE : #18205
DATE SUBMITTED: 02-24-97
PROJECT REF. : WELDON SPRING

RESULTS REPORTED IN pCi/L

CLIENT ID	ATAS ID	RADIONUCLIDE	RESULT
PW-8	18205.01	GROSS ALPHA	3 +/- 3*
PW-8	18205.01	GROSS BETA	5 +/- 5*
PW-8	18205.01	TOTAL URANIUM (mg/L)	<0.005

* VARIABILITY OF THE RADIOACTIVE DISINTERGRATION PROCESS (COUNTING ERROR) AT THE 95% CONFIDENCE LEVEL, 1.96σ.
pCi/L= PICOCURIES PER LITER
mg/L = PARTS PER MILLION(PPM)

SAMPLING PROTOCOL

Parameter	Soil	Water		Non-aqueous Fluids & Solid - Liquid Mixtures
	Type of Container	Type of Container		Type of Container
BTEX/Volatiles[1]	(1) 4 oz. precleaned glass (No Headspace)	(2) VOA vials (HCL) (No Headspace)		(1) VOA vial (No Headspace)
TPH[1]	(1) 4 oz. glass	(1) 32 oz. glass (HCL)		(1) 32 oz. glass
PNAs[1]	(1) 4 oz. precleaned glass	(1) 32 oz. precleaned amber glass		(1) 32 oz. glass
PCBs[1]	(1) 4 oz. glass	(1) 32 oz. precleaned amber glass		(1) 32 oz. glass
Metals (Wastewater)	—	(1) 32 oz. plastic (HNO_3)		—
Metals (Site Assessment Samples)	(1) 4 oz. glass	(1) 32 oz. plastic (Filtering necessary; add HNO_3) NOTE: Amount of sample is based on amount of solids.		—
Flashpoint[2] Corrosivity, Reactivity	(1) 4 oz. glass	(1) 16 oz. plastic		(1) 16 oz. glass
TCLP Metals[2]	(1) 16 oz. glass	<0.5% solids	(1) 32 oz. glass	(1) 32 oz. glass
		>0.5% solids	(1) 1/2 gallon glass	
ZHE (Zero Head-space Extraction)	(1) 4 oz. precleaned glass (No Headspace)	<0.5% solids	(2) VOA vials (No Headspace)	(1) VOA vial (No Headspace)
		>0.5% solids	(1) 32 oz. glass (No Headspace)	
TCLP BN/AE & Pest. & Herbs.[2,3]	(1) 4 oz. precleaned glass	(2) 32 oz. precleaned amber glass		(1) 32 oz. glass
TTOs (Total Toxic Organics)	(1) 4 oz. precleaned glass (No Headspace)	(2) VOA vials (HCL) and (2) 32 oz. precleaned amber glass (No Headspace)		(1) 32 oz. glass (No Headspace)

EXCEPTIONS

1. When combining parameters for *only* soil, (1) 4 oz. precleaned glass container is necessary.
2. When combining parameters for *only* soil, (1) 32 oz. glass container is necessary.
3. When combining parameters for *only* water and other, (1) 1/2 gallon glass container is necessary.
   When combining parameters for *only* water and other, and recovery correction is required, (1) gallon glass container is necessary.

ATAS 875 Fee Fee Road • Maryland Heights, MO 63043 • (314) 434-4570 - FAX (314) 434-0080

CLIENT: STANLEY M. REMINGTON
919 BROADMOOR LANE
ST. CHARLES, MO 63301
ATTN: STANLEY M. REMINGTON

REPORT: 1830401EX(275)

DATE : 03-14-97

SAMPLE MATRIX : WATER
ATAS # : LABORATORY CONTROL SAMPLE
DATE SUBMITTED: 03-06-97
DATE EXTRACTED: 03-07-97
DATE ANALYZED : 03-10-97
METHOD REF. : SW846-8090, EPA METHODOLOGY
PROJECT : WELDON SPRING
SAMPLE ID : LABORATORY CONTROL SAMPLE

	LCS % REC.	LCSD % REC.	RPD
2,6 DNT	106	93	13
2,4 DNT	100	86	15

AMERICAN TECHNICAL & ANALYTICAL SERVICES, INC.

875 Fee Fee Road • Maryland Heights, MO 63043 • (314) 434-4570 • FAX (314) 434-0080

March 14, 1997

Stanley M. Remington
956 Broadmoor Lane
St. Charles, MO 63301

RE: ATAS #18304.01
Weldon Spring

Dear Mr. Remington:

Enclosed is the analytical report for the sample received in our laboratory on March 6, 1997.

If, in your review, you should have any questions or require additional information, please call Rhonda Tinker, Assistant Project Manager, or me at (314) 434-4570.

Thank you for choosing ATAS for your analytical needs.

Sincerely,

Richard H. Mannz
Project Manager

Enclosures

RHM/dms

ATAS 875 Fee Fee Road • Maryland Heights, MO 63043 • (314) 434-4570 - FAX (314) 434-0080

CLIENT: STANLEY M. REMINGTON
919 BROADMOOR LANE
ST. CHARLES, MO 63301
ATTN: STANLEY M. REMINGTON

REPORT: 1830401RA(275)
DATE : 03-14-97

SAMPLE MATRIX : SOIL
ATAS # : 18304.01
DATE SUBMITTED: 03-06-97
PROJECT : WELDON SPRING
SAMPLE ID : NP-ES23-030697-C

PARAMETER	REPORTING LIMIT	UNITS	RESULTS	DATE ANALYZED	METHOD REFERENCE
INORGANICS					
NITRATE-SPEC.	0.2	mg/L	11.4	03-13-97	EPA 300.0
METALS					
ARSENIC	10.0	ug/L	ND	03-10-97	SW 6010
CHROMIUM	5.0	ug/L	ND	03-10-97	SW 6010
LEAD	3.0	ug/L	ND	03-10-97	SW 6010
MANGANESE	3.0	ug/L	ND	03-10-97	SW 6010
MERCURY	0.1	ug/L	ND	03-10-97	SW 7470
SELENIUM	5.0	ug/L	ND	03-10-97	SW 6010

mg/L = PARTS PER MILLION(PPM)
ug/L = PARTS PER BILLION(PPB)
ND = NOT DETECTED ABOVE REPORTING LIMIT

ATAS 875 Fee Fee Road • Maryland Heights, MO 63043 • (314) 434-4570 - FAX (314) 434-0080

CLIENT: STANLEY M. REMINGTON
919 BROADMOOR LANE
ST. CHARLES, MO 63301
ATTN: STANLEY M. REMINGTON

REPORT: 1830401RA(275)

DATE : 03-14-97

QA/QC

DESCRIPTION		PARAMETER	RESULTS	
METHOD BLANK	03-10-97	ARSENIC	<10.0	ug/L
METHOD BLANK	03-10-97	CHROMIUM	<5.0	ug/L
METHOD BLANK	03-10-97	LEAD	<3.0	ug/L
METHOD BLANK	03-10-97	MANGANESE	<3.0	ug/L
METHOD BLANK	03-10-97	SELENIUM	<5.0	ug/L
METHOD BLANK	03-13-97	NITRATE	<0.2	mg/L
CONTROL SPIKE	03-10-97	ARSENIC	106 %	RECOVERY
CONTROL SPIKE	03-10-97	CHROMIUM	102 %	RECOVERY
CONTROL SPIKE	03-10-97	LEAD	101 %	RECOVERY
CONTROL SPIKE	03-10-97	MANGANESE	100 %	RECOVERY
CONTROL SPIKE	03-10-97	SELENIUM	103 %	RECOVERY
CONTROL SPIKE	03-13-97	NITRATE	103 %	RECOVERY

ATAS 875 Fee Fee Road • Maryland Heights, MO 63043 • (314) 434-4570 - FAX (314) 434-0080

CLIENT: STANLEY M. REMINGTON
919 BROADMOOR LANE
ST. CHARLES, MO 63301
ATTN: STANLEY M. REMINGTON

REPORT: 1830401RA(275)
DATE : 03-14-97

SAMPLE MATRIX : WATER
ATAS EPISODE : #18304
DATE SUBMITTED: 03-06-97
PROJECT REF. : WELDON SPRING

RESULTS REPORTED IN pCi/L

CLIENT ID	ATAS ID	RADIONUCLIDE	RESULT
NP-ES23-030697-C	18304.01	GROSS ALPHA	0 +/- 3*
NP-ES23-030697-C	18304.01	GROSS BETA	17+/- 10*
NP-ES23-030697-C	18304.01	TOTAL URANIUM (mg/L)	<0.005

* VARIABILITY OF THE RADIOACTIVE DISINTERGRATION PROCESS (COUNTING ERROR) AT THE 95% CONFIDENCE LEVEL, 1.96σ.
pCi/L= PICOCURIES PER LITER
mg/L = PARTS PER MILLION(PPM)

ATAS 875 Fee Fee Road • Maryland Heights, MO 63043 • (314) 434-4570 - FAX (314) 434-0080

CLIENT: STANLEY M. REMINGTON
919 BROADMOOR LANE
ST. CHARLES, MO 63301
ATTN: STANLEY M. REMINGTON

REPORT: 1830401EX(275)
DATE : 03-14-97

SAMPLE MATRIX : WATER
ATAS # : 18304.01
DATE SUBMITTED: 03-06-97
DATE EXTRACTED: 03-07-97
DATE ANALYZED : 03-10-97
METHOD REF. : SW846-8090, EPA METHODOLOGY
PROJECT : WELDON SPRING
SAMPLE ID : NP-ES23-030697-C

RESULTS REPORTED IN ug/L OR PARTS PER BILLION(PPB)

EXPLOSIVE	REPORTING LIMIT	RESULTS
2,6 DNT	0.108	ND
2,4 DNT	0.0215	ND

QA/QC SURROGATE RECOVERY

DECACHLOROBIPHENYL(30-150)	105 %
TETRACHLORO-M-XYLENE(30-150)	80 %

ND= NOT DETECTED ABOVE QUANTITATION LIMIT

ATAS 875 Fee Fee Road • Maryland Heights, MO 63043 • (314) 434-4570 • FAX (314) 434-0080

CLIENT: STANLEY M. REMINGTON
919 BROADMOOR LANE
ST. CHARLES, MO 63301
ATTN: STANLEY M. REMINGTON

REPORT #: 1630401EX(275)
DATE : 03-14-97

SAMPLE MATRIX : WATER
ATAS # : METHOD BLANK
DATE SUBMITTED: 03-06-97
DATE EXTRACTED: 03-07-97
DATE ANALYZED : 03-10-97
METHOD REF. : SW846-8090, EPA METHODOLOGY
PROJECT : WELDON SPRING
SAMPLE ID : METHOD BLANK

RESULTS REPORTED IN ug/L OR PARTS PER BILLION (PPB)

EXPLOSIVE	REPORTING LIMIT	RESULTS
2,6 DNT	0.108	ND
2,4 DNT	0.0215	ND

QA/QC SURROGATE RECOVERY

DECACHLOROBIPHENYL (30-150)
TETRACHLORO-M-XYLENE (30-150)

ND= NOT DETECTED ABOVE QUANTITATION LIMIT

C

ENVIRONMENTAL SAMPLE CHAIN-OF-CUSTODY / AUTHORIZATION FORM

WELDON SPRING SITE REMEDIAL ACTION PROJECT (WSSRAP)
7295 HIGHWAY 94 SOUTH, ST. CHARLES, MO 63304
TELEPHONE (314) 441-8086 TELEX (314) 447-0803

Validation Documentation ☐

ES&H 4.1.2.1, Rev.4, Effective 11/92

WSSRAP Contact: ______
Phone Number: ______
Request Number: ______

Lab/P.O. #: ______ Dept./Cost Code: ______
Requisitioner: St. Charles S096
Turnaround Time: ☐ Standard ☐ Accelerated ☐ Priority ☐ Urgent ☐ Emergency

#	Sample ID	QC	Date Sampled	Matrix	Cont.	Preserv.	Parameters	LM 3-6-97 BA-AL-105	Arch. (Y/N)
	NP-ES23-030697-C		3/6/97	Water	1-1 liter	HNO3	As,Cr,Hg,Mn,Se,Pb	18304.01	N
	↓		↓	↓	1-1 liter glass	Ice	2,4-DNT	↓	↓
					1-1 liter	H2SO4	NO3		
					1-4 liter	HNO3	U, Gross alpha, Gross beta		

Sampler's Signature ______ Checked By [signature] Technical Reviewer ______

Relinquished By	Received By	Date	Time	Reason for Transfer	Seal Intact? (Y/N)	Cooler Temp
Tom Walton	[signature]	3/6/97	1210			
[signature]	[signature] 10°C	3/6/97	1335			

AUTHORIZATION

W-F Procurement ______ Date ______ ES&H ______ Date ______ Site Shipping Officer ______ Date ______

St. Charles County Water Department
1635 South Highway 94
Defiance, Missouri 63341
(314)-926-9222
Fax 926-8911

Feb-97 Water Sales Report

Date of Report **03/03/97**

Water Production			268,382,000
Washwater Used			4,902,000
Delivered to System		**Total——**	**263,480,000**
Mo. American	Booster Station		180,000,000
4132835-007	Francis Howell		3,000
4132850-007	Mo. Hwys & Trans.		(3,500)
4133000-004	M. K. Fergusen		173,000
4133040-015	M. K. Fergusen		107,000
4133010-002	M. K. Fergusen		367,500
4133020-000	M, K. Fergusen		500
4132855-002	Francis Howell		71,000
4132890-009	M. K. Fergusen		45,000
95018237-000	M. K. Fergusen		(700)
4132851-006	Mo. Hwys & Trans.		(100)
		Total——	**180,763,000**
Water Dist. #2	24" East Line		67,550,000
	24" West Line		2,453,000
	Bypass		0,000
		Total——	**70,003,000**
Water Dist. #2	New Melle	**Total——**	**6,067,000**
National Guard	Blgd S-61		0,000
Area	Wash Rack		4,000
		Total——	**4,000**
Total Water Sales	**********		**256,837,000**

(A:\FEBWS97.wpd)

St. Charles County Water Department
1635 South Highway 94
Defiance, Missouri 63341
(314)-926-9222
Fax 926-8911

Feb-97 Inventory of Chemicals

Date	Invoice #	LIME	Date	Invoice #	CL2
1-31	**Balance**	**327342**	**1-31**	**Balance**	**11798**
2-4	332208	48440	2-11	97-258	8000
2-6	332646	48960	2-26	97-358	8000
2-11	333481	49660			
2-13	333941	50380			
2-18	334538	48780			
2-20	335047	49060			
2-25	335747	48980			
2-27	336217	49740			

Amount Received	**394000**	**16000**
Total Amount	721342	27798
Amount Used	375312	15780
Balance 2-28	**346030**	**12018**
lbs. Per. 1000 Gallons	1.39	0.0588
Part Per. Million	152	6.36
Avg. Day Usage	13404	564
Year to Date	**792373**	**32850**

(A:\FEB97inv.wpd)

Results 2/28/91

St. Louis County Department of Health

SAMPLE ANALYSIS REQUEST

Date Received 2/5/97

ATTENTION: St. Louis County Department of Health
Environmental Health Laboratories

SAMPLE NUMBER: PWSD I.D. 6079507 - St. Charles County Water

RECEIVED
MAR 03 1997
ST. CHARLES COUNTY HIGHWAY DEPARTMENT

DATE COLLECTED: 01-01- 01-31-97

COLLECTED BY: First Shift Operator

ADDRESS: 1635 South HWY 94

Defiance, MO Zip Code 63341

TELEPHONE NO.: (314) 926-9222 (Plant 447-0510) Thomas Aeron

ANALYSIS REQUESTED: RAW

X GROSS ALPHA X GROSS BETA ____ RA-226 ____ RA-228

____ OTHER (Identify) ____

SLR97-2

FOR LABORATORY USE ONLY

	RESULTS (pCi/L)	*MDL (pCi/L)
Gross Alpha	2.1 ± 1.0	1.0
Gross Beta	5.9 ± 0.6	1.0
Radium 226		0.1
Radium 228		1.0
Other (Identify)		

JH 2/6/91

Procedure used: Measurement of Radioactivity in Drinking Water
EPA-600/4-80-032

COMMENTS: * MDL is the minimum detectable limit.

ANALYSIS PERFORMED BY: ST. LOUIS COUNTY DEPARTMENT OF HEALTH
ENVIRONMENTAL HEALTH LABORATORIES
111 So. Meramec - 5th floor
Clayton, MO 63105
(314) 854-6324

BLAB/RAD-WTR(9/96

Results 2/28/97

St. Louis County Department of Health

SAMPLE ANALYSIS REQUEST

Date Received 2/5/97

ATTENTION: St. Louis County Department of Health
Environmental Health Laboratories

SAMPLE NUMBER: PWSD I.D. 6079507 - St. Charles County Water

DATE COLLECTED: 01-01 - 01-31-97

RECEIVED MAR 03 1997 ST. CHARLES COUNTY HIGHWAY DEPARTMENT

COLLECTED BY: First Shift Operator

ADDRESS: 1635 South HWY 94

Defiance, MO Zip Code 63341

TELEPHONE NO.: (314) 926-9222 (Plant 447-0510) Thomas Aaron

ANALYSIS REQUESTED: finish

X GROSS ALPHA X GROSS BETA ____ RA-226 ____ RA-228

____ OTHER (Identify) ____

SCT97-2

FOR LABORATORY USE ONLY

	RESULTS (pCi/L)	*MDL (pCi/L)
Gross Alpha	1.5 ± 1.0	1.0
Gross Beta	4.3 ± 0.6	1.0
Radium 226		0.1
Radium 228		1.0
Other (Identify)		

JH 2/24/97

Procedure used: Measurement of Radioactivity in Drinking Water
EPA-600/4-80-032

COMMENTS: * MDL is the minimum detectable limit.

ANALYSIS PERFORMED BY: ST. LOUIS COUNTY DEPARTMENT OF HEALTH
ENVIRONMENTAL HEALTH LABORATORIES
111 So. Meramec - 5th floor
Clayton, MO 63105
(314) 854-6324

ELAB/RAD-WTR/SPR

STATE OF MISSOURI
Mel Carnahan, Governor • David A. Shorr, Director
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF ENVIRONMENTAL QUALITY
P.O. Box 176 Jefferson City, MO 65102-0176

February 13, 1997

Mr. Steve McCracken, DOE Project Manager
Weldon Spring Site Remedial Action Project
7295 Highway 94 South
St. Charles, MO 63304

Dear Mr. McCracken:

This quarterly report summarizes the activities and follow-up of issues associated with MDNR's oversight role at the Weldon Spring Site Remedial Action Project (WSSRAP). This report covers the time period from October 1, 1996 through December 31, 1996.

As stated, this report covers the fourth quarter of calendar year 1996. The information for this report was compiled by Ms. Martha Windsor, Mr. Glenn Carlson, and Mr. Robert Stovall. As always, your comments and suggestions on this report are encouraged.

If you desire additional information regarding specific issues mentioned in this report, please contact me at (573) 751-6838.

Sincerely,

HAZARDOUS WASTE PROGRAM

Robert Geller

for Larry Erickson, P.E.
DOE-Unit Chief
Federal Facilities Section

enclosure

c: Dan Wall, EPA
Steve Iverson, Corps of Engineers
Ed Valdez, FUSRAP Field Office
Conn Rodden, St. Louis County Health Department
Terry Gloriad, St. Louis County Water Department
Joyce Mueller, St. Charles County Council
Helene Diller, St. Charles Citizens' Commission
Kay Drey, Coalition for the Environment
St. Charles County Water Department
Sierra Club

Quarterly Report Summary

Introduction and Purpose

This report summarizes key activities at the Weldon Spring Site Remedial Action Project (WSSRAP) by the Department of Energy and their contractors for site remediation activities. It also summarizes Missouri Department of Natural Resources' (MDNR) oversight activities at WSSRAP to ensure that the Department of Energy and their contractors are protecting human health and the environment during the site remediation process. The time period covers site activities for the Fourth Quarter of 1996.

Fourth Quarter 1996 (October through December)

Activities During Fourth Quarter

- MDNR provided comments to the Department of Energy on the following documents:
  - 60 % Design Drawings and Specifications for the Chemical Stabilization and Solidification Plant.
  - Draft Operations Plan for the Chemical Stabilization and Solidification (CSS) plant.
  - Chemical Stabilization and Solidification (CSS) Production Dredge Technical Specification 14592.
  - Leachate Production Response Plan Revision 2.
  - Quarry Residuals Draft Remedial Investigation and Draft Baseline Risk Assessment.
  - Groundwater Operable Unit Draft of the Remedial Investigation and Draft of the Baseline Risk Assessment.
  - WSSRAP Modified TCLP Test for the Disposal Cell Waste.
- MDNR Federal Facilities Staff met with the St. Charles County Citizens Commission and DOE at the WSSRAP site for a technical briefing by DOE regarding wastewater treatment processes at WSSRAP.
- MDNR Federal Facilities Staff continued oversight of the wastewater treatment process at WSSRAP by taking split samples with DOE of the treated water from the Site Water Treatment Plant.

MDNR field office at WSSRAP. Glenn completed the 40-hour HAZWOPER training, GET/GERT & SHARP training, and medical monitoring in December.

- MDNR Federal Facilities Staff met with DOE on December 3, 1996 for a briefing on the Chemical Stabilization and Solidification (CSS) plant 100% Design drawings and specifications.

- The U.S. Army Corps of Engineers is planning to begin construction for a wetlands in early spring of 1997 adjacent to the Quarry Residuals Operable Unit. The wetlands will be located in the St. Charles County Wellfield. The water level will be raised about 6 inches during the spring and fall. During the summer and winter months the constructed wetland cells will be emptied. This project is a part of the Federal governments Missouri River Bank Stabilization and Navigation and Fish and Wildlife Mitigation Project.

Summary of Events:

Occurrence Reports

The occurrence report involving the barium fluoride drum being emptied into the SWTP equalization basin resulted in MDNR Hazardous Waste Program Enforcement Section issuing a Notice of Violation (NOV) to the Department of Energy. Currently MDNR and DOE are negotiating the resolution of the NOV.

Notification of Post ROD Changes at Weldon Spring Site

- Instead of leaving RCRA/TSA soils at Building 434, WSSRAP proposed tarping or placing RCRA/TSCA soils in large water-tight boxes in the TSA, meeting RCRA waste pile requirements. [These soils are PCB contaminated].

- Proposed using a short distance of Highway 94 to transport radioactive contaminated soils from the quarry to the dedicated haul road.

- ROD changes included placement of tanks and secondary containment of RCRA wastes at the TSA. (40 CFR 264 Subpart J).

- Permitted non-RCRA wastes, including the rubble from the RCRA/Nitro soils to be stored at non-RCRA storage areas.

- Instead of only treating water at the Quarry, water from the chemical plant will be transported to the QWTP for treatment.

MISSOURI DEPARTMENT OF NATURAL RESOURCES DATA RESULTS
SUMMARY OF QWTP/SWTP ANALYTICAL RESULTS

BATCH #	NPDES		SWTP 88		SWTP 89		SWTP 90	
	PERMIT		9/26/96	MDOH	9/18/96	MDOH	10/9/96	
DATE OF SITE NOTIFICATION			9/25/96	ESP	9/30/96	ESP	10/7/96	
			10/22/96		10/22/96		10/22/96	
MODE OF NOTIFICATION			Hand Carry		Hand Carry		Hand Carry	
PARAMETER								
COD								
TSS								
ARSENIC	0.1	mg/L	<2.0	ug/L	<2.0	ug/L	<2.0	ug/L
CHROMIUM								
LEAD								
MANGANESE	0.1	mg/L	5.28	ug/L	<2.0	ug/L	<2.00	ug/L
MERCURY								
SELENIUM								
CYANIDE, AMENABLE								
2,4-DNT	0.22	microgr/L	<0.03	ug/L	<0.03	ug/L	<0.03	ug/L
FLUORIDE								
NITRATE+NITRITE as N	monitored		<=0.11	mg/L	</=2.61	mg/L	<=3.95	mg/L
SULFATE								
CHLORIDE								
GROSS ALPHA	monitored		<1.0	pCi/L	4.8+/-2.5	pCi/L	2.1+/-2.0	pCi/L
GROSS BETA	monitored		<1.0	pCi/L	15.4+/-2.0	pCi/L	8.6+/-1.8	pCi/L
URANIUM, TOTAL	monitored		<0.2	pCi/L	1.9+/-0.3	pCi/L	1.1+/-0.2	pCi/L
RADIUM-226								
RADIUM-228								
THORIUM-230								
THORIUM-232								
PRIORITY POLLUTANTS								
1. SEMI-VOA								
2. VOA								
3. PCBS	ND		<0.5	ug/L	<0.5	ug/L	<0.5	ug/L
4. PESTICIDES								
5. METALS\OTHERS								

MISSOURI DEPARTMENT OF NATURAL RESOURCES DATA RESULTS
SUMMARY OF QWTP/SWTP ANALYTICAL RESULTS

BATCH #			NPDES		SWTP 94					
			PERMIT							
DATE OF SITE NOTIFICATION					12/24/96	ESP				
					12/27/96	MDOH				
MODE OF NOTIFICATION										
PARAMETER										
COD										
TSS										
ARSENIC			0.1	mg/L	<2.0	ug/L				
CHROMIUM										
LEAD										
MANGANESE			0.1	mg/L	<2.00	ug/L				
MERCURY										
SELENIUM										
CYANIDE, AMENABLE										
2,4-DNT			0.22	microgr/L	<0.03	ug/L				
FLUORIDE										
NITRATE+NITRITE as N			monitored		<=1.68	mg/L				
SULFATE										
CHLORIDE										
GROSS ALPHA			monitored		4.7+/-2.0	pCi/L				
GROSS BETA			monitored		9.9+/-1.7	pCi/L				
URANIUM, TOTAL			monitored		0.6+/-0.2	pCi/L				
RADIUM-226										
RADIUM-228										
THORIUM-230										
THORIUM-232										
PRIORITY POLLUTANTS										
1. SEMI-VOA										
2. VOA										
3. PCBS			ND		<0.50	ug/L				
4. PESTICIDES										
5. METALS\OTHERS										

SUMMARY OF SWTP (BATCH 091) ANALYTICAL RESULTS

10/29/96 1130

From all parties receiving samples on 10/17/96

PARAMETER	NPDES LIMITS (mg/l) Unless noted	PMC DATA RESULTS	MoDNR DATA RESULTS	EPA DATA RESULTS	ST. CHARLES COUNTY DATA RESULTS	ST. LOUIS COUNTY H & W DATA RESULTS
COD	90 / 60	6.9 mg/l		NA	NA	NA
TSS	50 / 30	2.0 mg/l		NA	NA	NA
ARSENIC	0.1	<0.0015 mg/l		NA	NA	
CHROMIUM	0.1	<0.001 mg/l		NA	NA	
LEAD	0.1	<0.001 mg/l		NA	NA	
MANGANESE	0.1	0.0014 mg/l		NA	NA	
MERCURY	0.004	<0.0001 mg/l		NA	NA	
SELENIUM	0.02	0.002 mg/l		NA	NA	
CYANIDE, AMENABLE	0.0075	<0.004 mg/l		NA	NA	
2,4-DNT	0.22 ug/l	<0.015 µg/l		NA	NA	
FLUORIDE	4.0	3.18 mg/l		NA	NA	
NITRATE + NITRITE AS N	20	3.0 mg/l		NA	NA	
SULFATE	500	300 mg/l		NA	NA	
CHLORIDE	*	242 mg/l		NA	NA	
GROSS ALPHA	*	5.38 ±2.75 pCi/l		NA	NA	3.5 ±1.3 pCi/l
GROSS BETA	*	15.2 ±3.32 pCi/l		NA	NA	6.7 ±1.1 pCi/l
URANIUM, TOTAL	**	1.46 ±0.032 pCi/l		NA	NA	1.2 ±0.3 pCi/l
RADIUM-226 ***	*	0.494 ±0.214 pCi/l		NA	NA	
RADIUM-228 ***	*	1.54 ±0.726 pCi/l		NA	NA	
THORIUM-230 ***	*	0.305 ±0.237 pCi/l		NA	NA	NA
THORIUM-232 ***	*	0.130 ±0.152 pCi/l		NA	NA	NA
pH (Std. Units)	6 – 9	7.32		NA	NA	
PRIORITY POLLUTANTS	(SEE BELOW)					
1. SEMI-VOA	*	NA		NA	NA	NA
2. VOA	*	<10 µg/l		NA	NA	NA
3. PCBs/PESTICIDES	****/*	<1.0 µg/l / NA		NA	NA	NA
4. METALS/OTHERS	*	NA				

* = Monitoring Parameter

** = Design Value of 30 pCi / l; Not to Exceed 100 pCi / l

*** = Monitoring parameter once per month.

**** = Effective limit of 1 µg/l

NA = NOT ANALYZED

= Data received after batch was discharged

SUMMARY OF SWTP (BATCH 093) ANALYTICAL RESULTS

12/6/96 0900

From all parties receiving samples on 11/25/96

PARAMETER	NPDES LIMITS (mg/l) Unless noted	PMC DATA RESULTS	MoDNR DATA RESULTS	EPA DATA RESULTS	ST. CHARLES COUNTY DATA RESULTS	ST. LOUIS COUNTY H & W DATA RESULTS
COD	90 / 60	<9.0 mg/l		NA	NA	NA
TSS	50 / 30	<6.0 mg/l		NA	NA	NA
ARSENIC	0.1	0.0029 mg/l		NA	NA	
CHROMIUM	0.1	<0.004 mg/l		NA	NA	
LEAD	0.1	<0.001 mg/l		NA	NA	
MANGANESE	0.1	0.0028 mg/l		NA	NA	
MERCURY	0.004	<0.00020 mg/l		NA	NA	
SELENIUM	0.02	0.0024 mg/l		NA	NA	
CYANIDE, AMENABLE	0.0075	<0.004 mg/l		NA	NA	
2,4-DNT	0.22 ug/l	<0.20 µg/l		NA	NA	
FLUORIDE	4.0	1.6 mg/l		NA	NA	
NITRATE + NITRITE AS N	20	0.75 mg/l		NA	NA	
SULFATE	500	300 mg/l		NA	NA	
CHLORIDE	*	140 mg/l		NA	NA	
GROSS ALPHA	*	3.6 ±4.2 pCi/l		NA	NA	
GROSS BETA	*	5.9 ±4.4 pCi/l		NA	NA	
URANIUM, TOTAL	**	0.630 ±0.032 pCi/l		NA	NA	
RADIUM-226 ***	*	0.56 ±0.37 pCi/l		NA	NA	
RADIUM-228 ***	*	0.75 ±0.41 pCi/l		NA	NA	
THORIUM-230 ***	*	−0.017 ±0.058 pCi/l		NA	NA	NA
THORIUM-232 ***	*	−0.006 ±0.040 pCi/l		NA	NA	NA
pH (Std. Units)	6 - 9	6.51		NA	NA	
PRIORITY POLLUTANTS	(SEE BELOW)					
1. SEMI-VOA	*	NA		NA	NA	NA
2. VOA	*	NA		NA	NA	NA
3. PCBs/PESTICIDES	****/*	<0.80 µg/l		NA	NA	NA
4. METALS/OTHERS	*	NA				

* = Monitoring Parameter

** = Design Value of 30 pCi / l; Not to Exceed 100 pCi / l

*** = Monitoring parameter once per month.

**** = Effective limit of 1 µg/l

NA = NOT ANALYZED

[redacted] = Data received after batch was discharged

Office of the County Executive

St. Charles County

Joe Ortwerth
County Executive

March 20, 1997

Mr. Wm. Glenn Covington
Kansas City District
U.S. Corps of Engineers
Environmental Resources
700 Federal Building
601 E. 12th St.
Kansas City, MO 64106-2896

Dear Mr. Covington:

St. Charles County has been pleased to engage in exploratory discussions with the Kansas City District of the Corps of Engineers regarding the Missouri River Bank Stabilization and Navigation Fish and Wildlife Mitigation Project proposed for the vicinity of the St. Charles County well fields.

As you know, the federal government transferred the water plant, piping and related facilities to St. Charles by quit claim deed so the county could produce potable water for our residents at a reasonable cost. These well fields provide the crucial drinking water supply for approximately 70,000 residents of St. Charles County.

For quite some time, the leadership of St. Charles County has been gravely concerned about the potential for the migration of radioactive and chemical contaminants from the abandoned Weldon Spring Quarry site into the alluvial floodplain servicing the St. Charles County well fields.

In considering the Corps' wetlands project, St. Charles County Engineer Joe Nichols has shared with you our deep concern that the proposed action may exacerbate conditions in the Missouri River alluvium and induce or hasten the migration of contaminants toward the county's vital water supply.

These concerns have taken on even greater significance based on the analysis conducted by the Hazardous Waste Program section of the Missouri Department of Natural Resources. In correspondence to you dated February 25, 1997, the Department stated that it "has significant concerns regarding the effect the proposed wetlands project might have on the migration or ability to monitor the migration of contaminants from the Weldon Spring site to the floodplain and St. Charles County well fields."

Historic Courthouse • 100 N. 3rd Street • Suite 318 • St. Charles, MO 63301
Telephone 314-949-7520 • Fax 314-949-7521

The Department further states that studies performed by the Corps and the Department of Energy fail to "adequately evaluate the effect of the wetlands project on migration or the ability to monitor the migration of contaminants..." The Department concludes "there is reason to believe that the wetlands project may, in fact, accelerate the migration of contaminants, e.g., uranium to the well fields."

We are particularly alarmed to learn that the Corps has failed to coordinate environmental assessments with MDNR and that a "Finding of No Significant Impact" (FONSI) has been arrived at without the concurrence of MDNR.

St. Charles County Hydrologist Stanley Remington has evaluated the DNR comments and believes their concerns are legitimate. He believes that this project has the potential to "increase the oxidation of uranium and its byproducts to a state where they are soluble and then can migrate at a faster rate toward the county well fields. He is also concerned about the possibility of surface water contamination being introduced into the county's wells.

Unless and until the Kansas City District can furnish MDNR and St. Charles County with persuasive and convincing evidence that this project will not jeopardize St. Charles County's water supply, St. Charles County cannot concur in the proposed action. Without such compelling evidence, St. Charles County will consider any necessary action to forestall this mitigation project.

Sincerely,

Joe Ortwerth
St. Charles County Executive

cc: Larry Erickson, MDNR
Stanley Remington, St. Charles County Hydrologist
Joe Nichols, St. Charles County Highway Engineer
Tom Engle, St. Charles County Director of Administration
Members, St. Charles County Council

Office of the County Executive

St. Charles County

Joe Ortwerth
County Executive

March 20, 1997

Mr. Jerry S. Van Fossen
Deputy Project Manager
Department of Energy
Weldon Spring Site Remedial Action Project
7295 Hwy. 94 S.
St. Charles, MO 63304

Dear Mr. Van Fossen:

St. Charles County has been pleased to engage in exploratory discussions with the Kansas City District of the Corps of Engineers regarding the Missouri River Bank Stabilization and Navigation Fish and Wildlife Mitigation Project proposed for the vicinity of the St. Charles County well fields.

As you know, the federal government transferred the water plant, piping and related facilities to St. Charles by quit claim deed so the county could produce potable water for our residents at a reasonable cost. These well fields provide the crucial drinking water supply for approximately 70,000 residents of St. Charles County.

For quite some time, the leadership of St. Charles County has been gravely concerned about the potential for the migration of radioactive and chemical contaminants from the abandoned Weldon Spring Quarry site into the alluvial floodplain servicing the St. Charles County well fields.

In considering the Corps' wetlands project, St. Charles County Engineer Joe Nichols has shared with you our deep concern that the proposed action may exacerbate conditions in the Missouri River alluvium and induce or hasten the migration of contaminants toward the county's vital water supply.

These concerns have taken on even greater significance based on the analysis conducted by the Hazardous Waste Program section of the Missouri Department of Natural Resources. In correspondence to you dated February 25, 1997, the Department stated that it "has significant concerns regarding the effect the proposed wetlands project might have on the migration or ability to monitor the migration of contaminants from the Weldon Spring site to the floodplain and St. Charles County well fields."

Historic Courthouse • 100 N. 3rd Street • Suite 318 • St. Charles, MO 63301
Telephone 314-949-7520 • Fax 314-949-7521

The Department further states that studies performed by the Corps and the Department of Energy fail to "adequately evaluate the effect of the wetlands project on migration or the ability to monitor the migration of contaminants..." The Department concludes "there is reason to believe that the wetlands project may, in fact, accelerate the migration of contaminants, e.g., uranium to the well fields."

We are particularly alarmed to learn that the Corps has failed to coordinate environmental assessments with MDNR and that a "Finding of No Significant Impact" (FONSI) has been arrived at without the concurrence of MDNR.

St. Charles County Hydrologist Stanley Remington has evaluated the DNR comments and believes their concerns are legitimate. He believes that this project has the potential to "increase the oxidation of uranium and its byproducts to a state where they are soluble and then can migrate at a faster rate toward the county well fields. He is also concerned about the possibility of surface water contamination being introduced into the county's wells.

Unless and until the Kansas City District can furnish MDNR and St. Charles County with persuasive and convincing evidence that this project will not jeopardize St. Charles County's water supply, St. Charles County cannot concur in the proposed action. Without such compelling evidence, St. Charles County will consider any necessary action to forestall this mitigation project.

Sincerely,

Joe Ortwerth
St. Charles County Executive

cc: Larry Erickson, MDNR
Stanley Remington, St. Charles County Hydrologist
Joe Nichols, St. Charles County Highway Engineer
Tom Engle, St. Charles County Director of Administration
Members, St. Charles County Council

ANNUAL REPORT

APRIL 1, 1996 - MARCH 31, 1997

BY

Stanley Remington

Consulting Hydrologist

Under article IV -Accounting - of my contract, I am required to file an annual accounting of the preceding year with the St. Charles County. The report shall include statistics on the Consultant's overall activities. It shall include all business revenues received by the organization and moneys spent.

Money Expended Under the Contract from April 1, 1996 - March 31, 1997

1.	Chemical Analysis	$13,076.93
2.	Hydrology Consulting Services	10,285.00
3.	Clerical	1,900.00
4.	Mileage	659.75
5.	Hotel	172.18
6.	Meals	60.00
	Total	$26,153.86

I had no other source of business revenues during this fiscal year.

ACTIVITIES

During the year, monthly and quarterly samples were taken. The quarterly samples were done with the Department of Energy. The samples were all sent for chemical analyses to the American Technical and Analytical Services, Inc. on Fee Fee Rd. in St. Louis County. This was done in accordance with Article I - General Terms, paragraph A, 1, 2 & 3 of the contract.

I attended two public meetings in behalf of the St. Charles County. This was done under Article I, para. A6.

Several reports were submitted to me for analyses and comments. These were mainly from the Department of Energy and the Missouri Department of Natural Resources. This is under Article I, para A4 & 5.

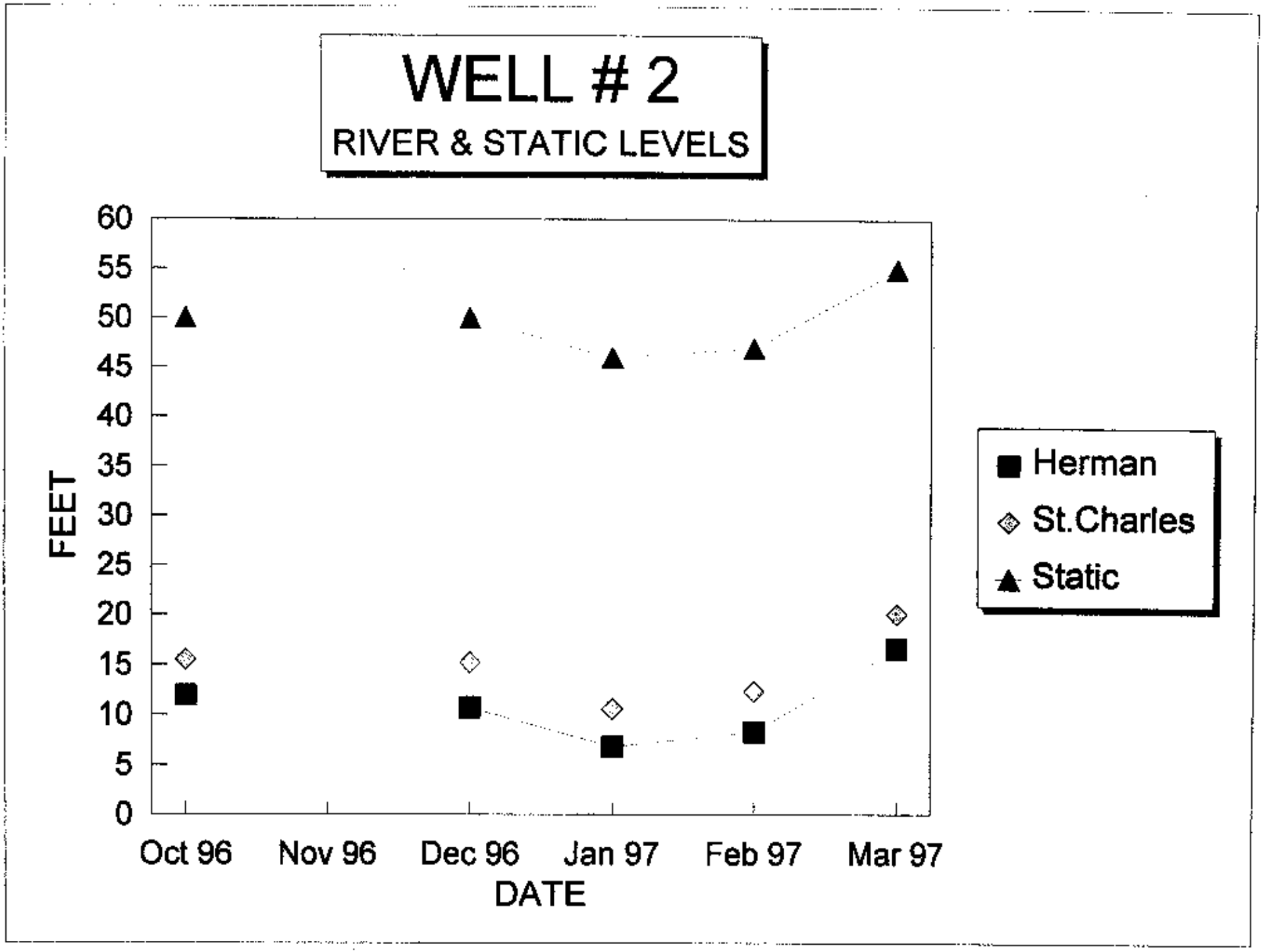
The two water treatment plants at the Weldon Spring Quarry and the Chemical Plant Site were periodically sampled during the year. The treatment was greatly reduced primarily because the quarry site was completely cleaned and only occasional rainwater flow collected in the quarry was treated. According to the Department of Energy during the calendar year 1996, 41.7 million gallons of water were treated from the raffinate pits and discharged into the Missouri River. This amounted to 22 batches. At the quarry site a total of 4.7 million gallons of water were treated. This amounted to 5 batches. Again these treated batches were discharged into the Missouri River. Projected amounts of water for the calendar year 1997 to be treated are 25 million gallons for the raffinate pits and 3 million gallons for the quarry site.

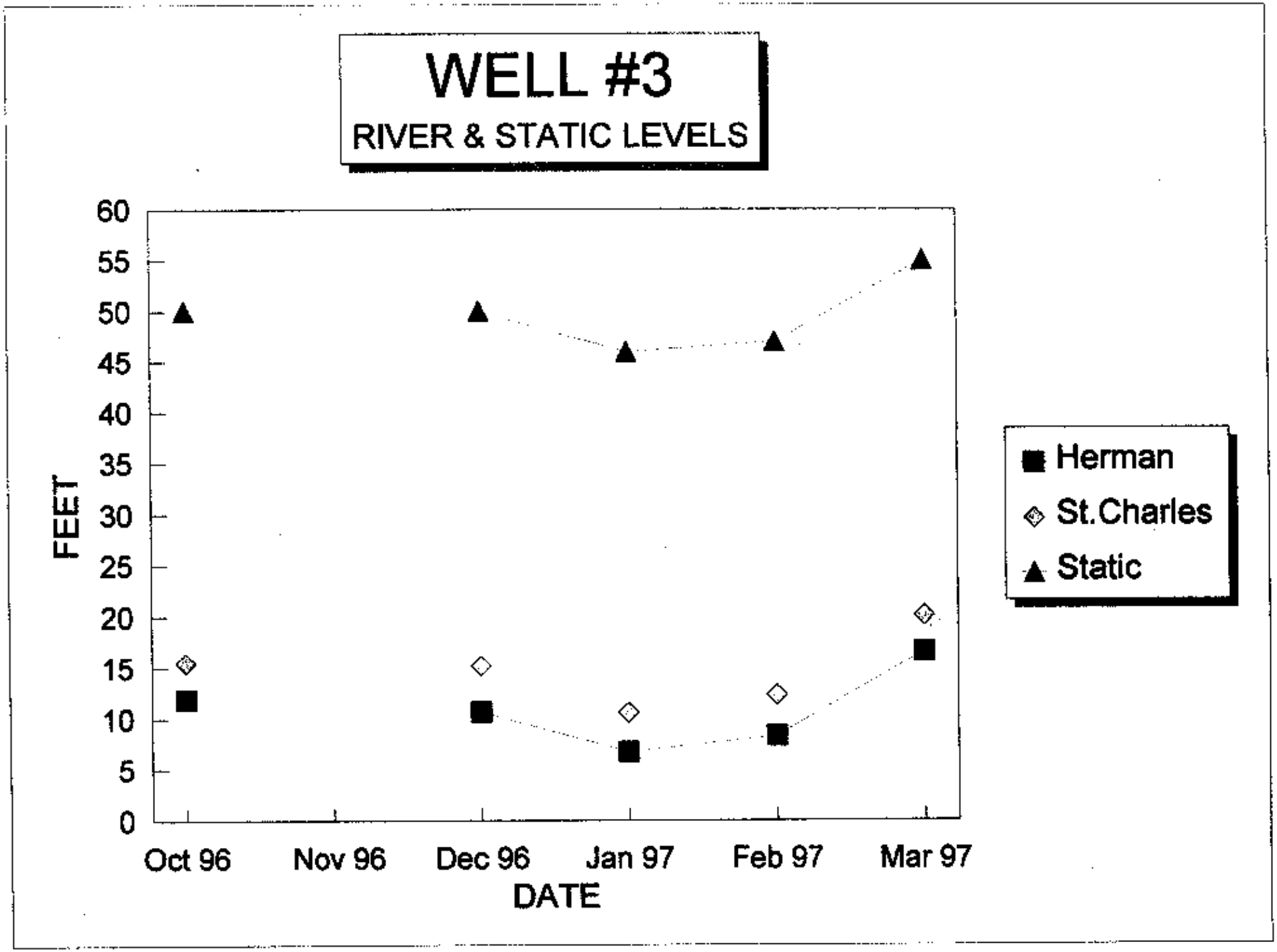
CONCLUSIONS

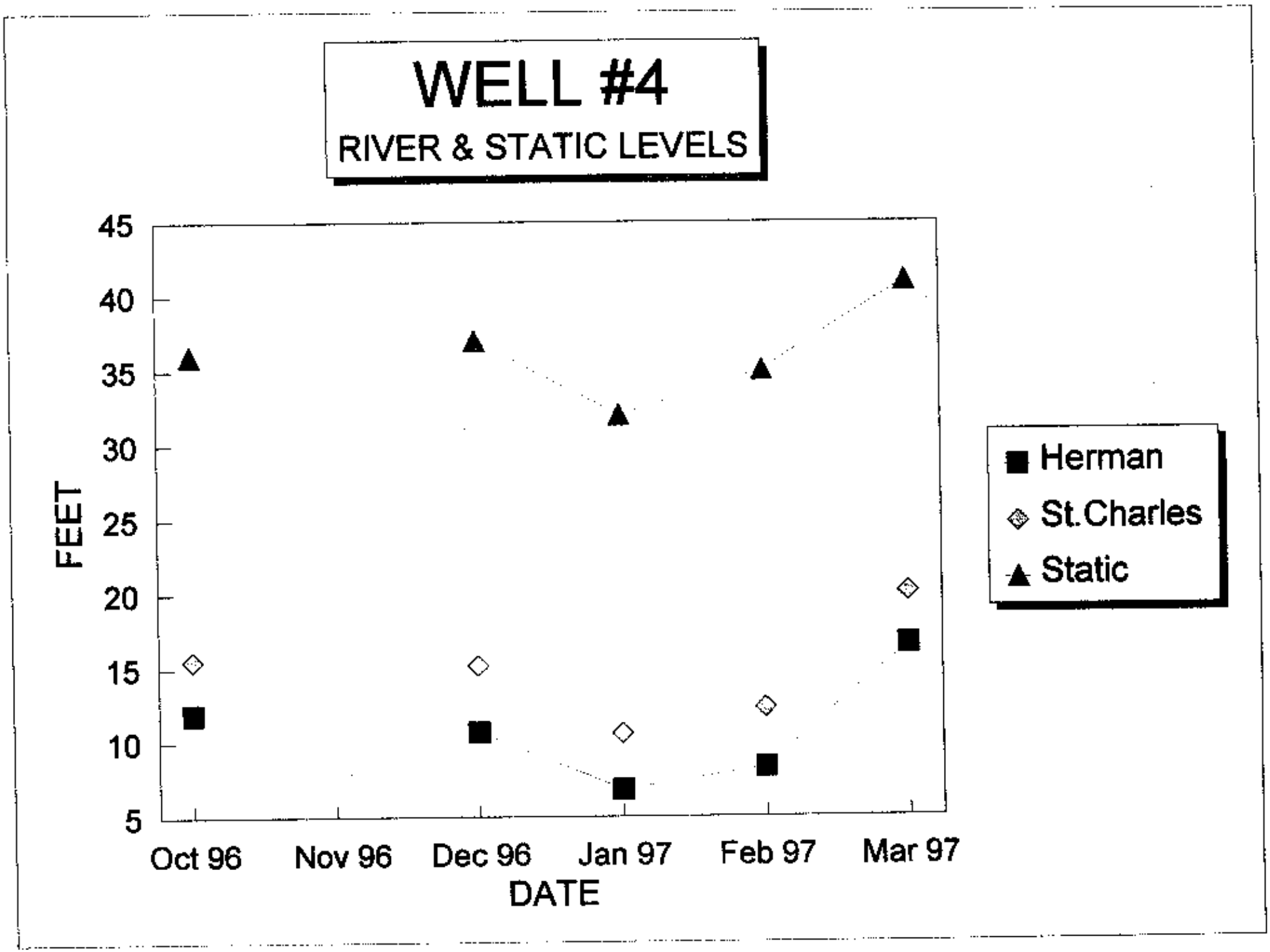
1. No hazardous chemicals have migrated into any of the production wells during the year. It is unlikely that this will ever occur unless a wetlands project proposed by the U. S. Corps of engineers changes the environment of the well filed inducing a speeded up migration of residual hazardous wastes into the well field. The answer to this potential problem is unknown at this time.

2. The reversal of flow away from the quarry may have occurred so that the toxic wastes are now flowing away , or north towards the original contaminated source.

3. The attached hydrographs show that no significant change in water levels in our pumping wells have occurred during the past year. You will note the influence of the flow in the Missouri River has on the static water levels at the wells.

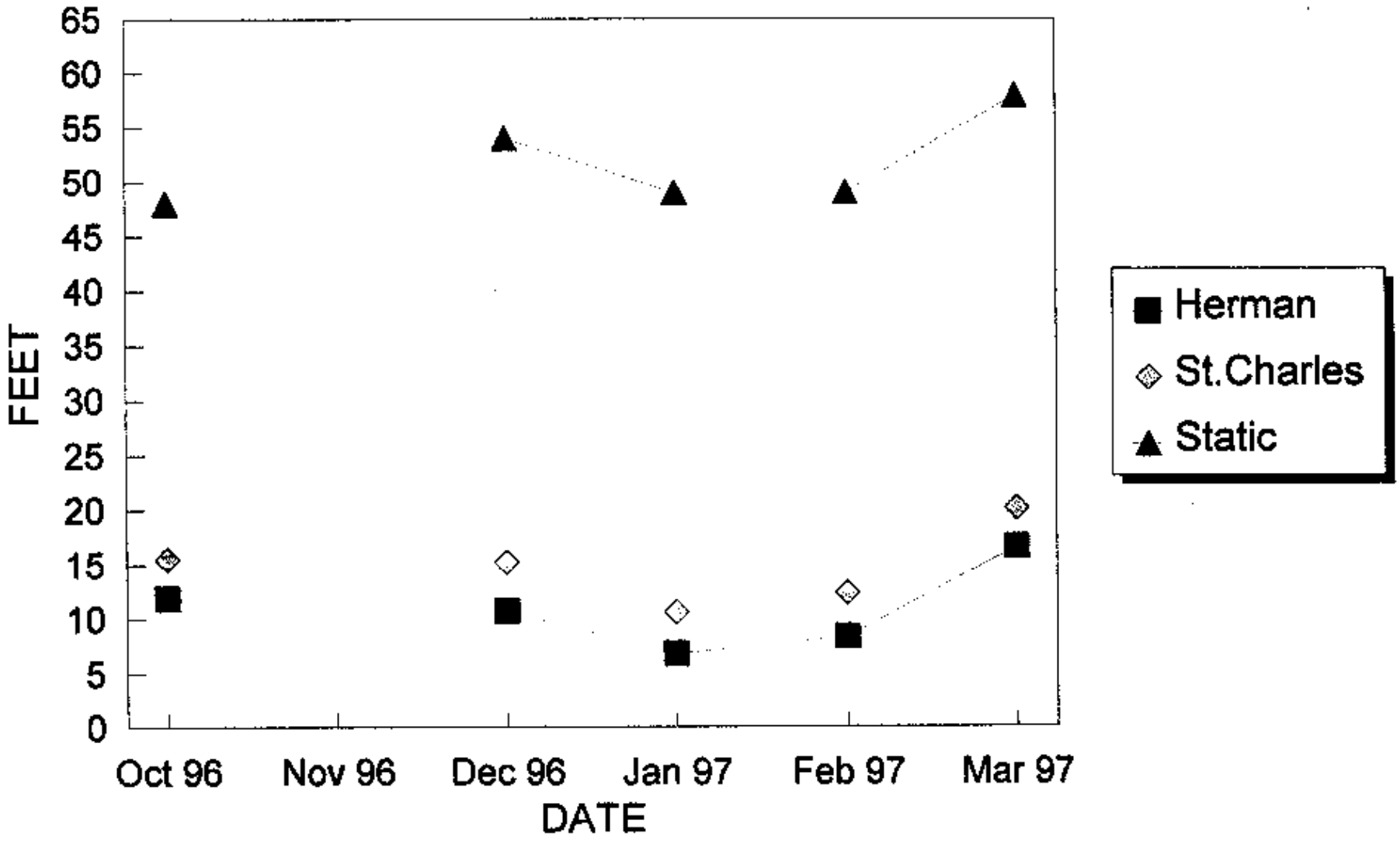

WELL # 2
RIVER & STATIC LEVELS
FEET
60
55
50
45
40
35
30
25
20
15
10
5
0
Oct 96
Nov 96
Dec 96
Jan 97
Feb 97
Mar 97
DATE
Herman
St.Charles
Static

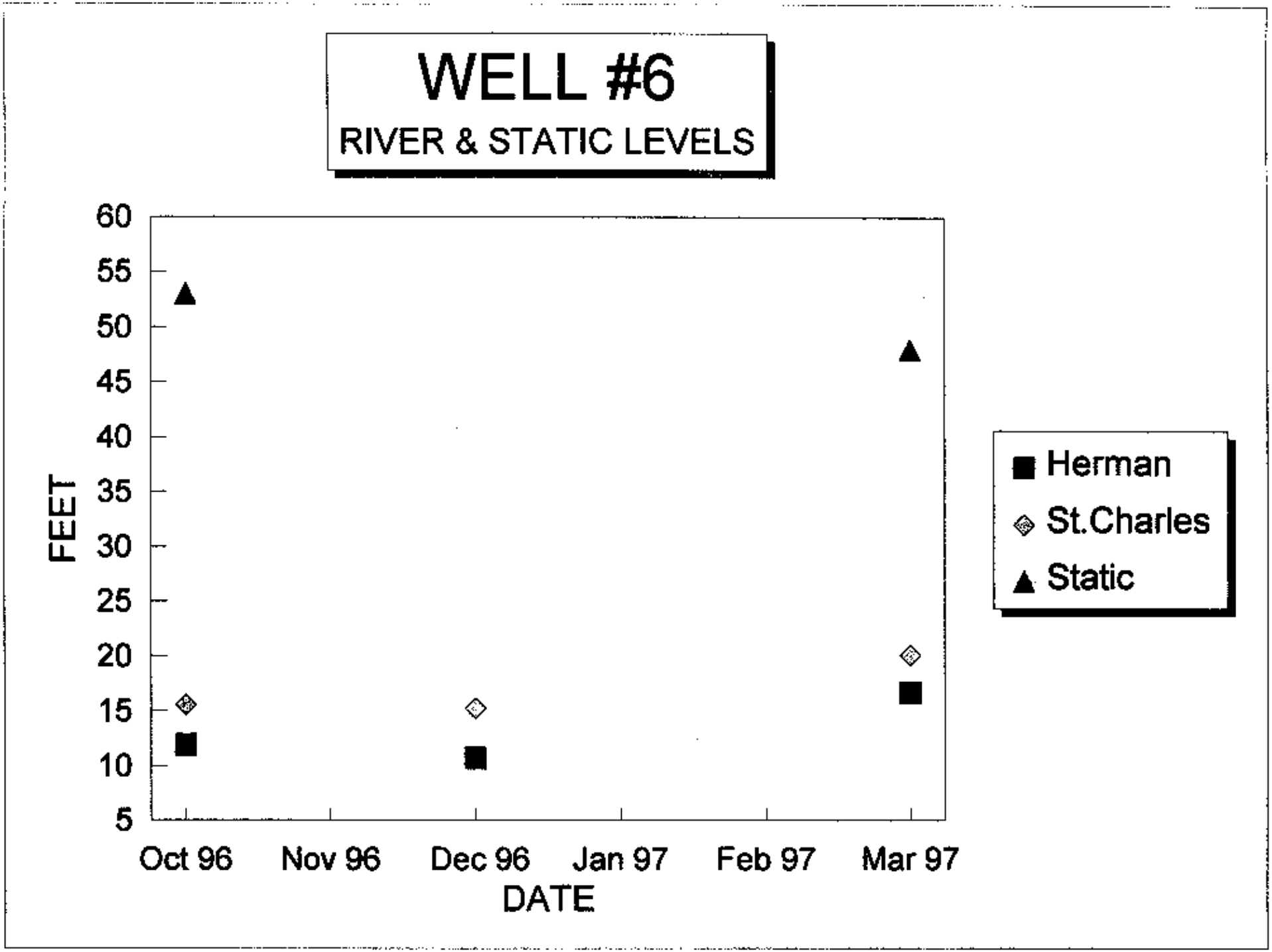

WELL #3
RIVER & STATIC LEVELS
60
55
50
45
40
35
30
25
20
15
10
5
0
FEET
Oct 96
Nov 96
Dec 96
Jan 97
Feb 97
Mar 97
DATE
Herman
St.Charles
Static

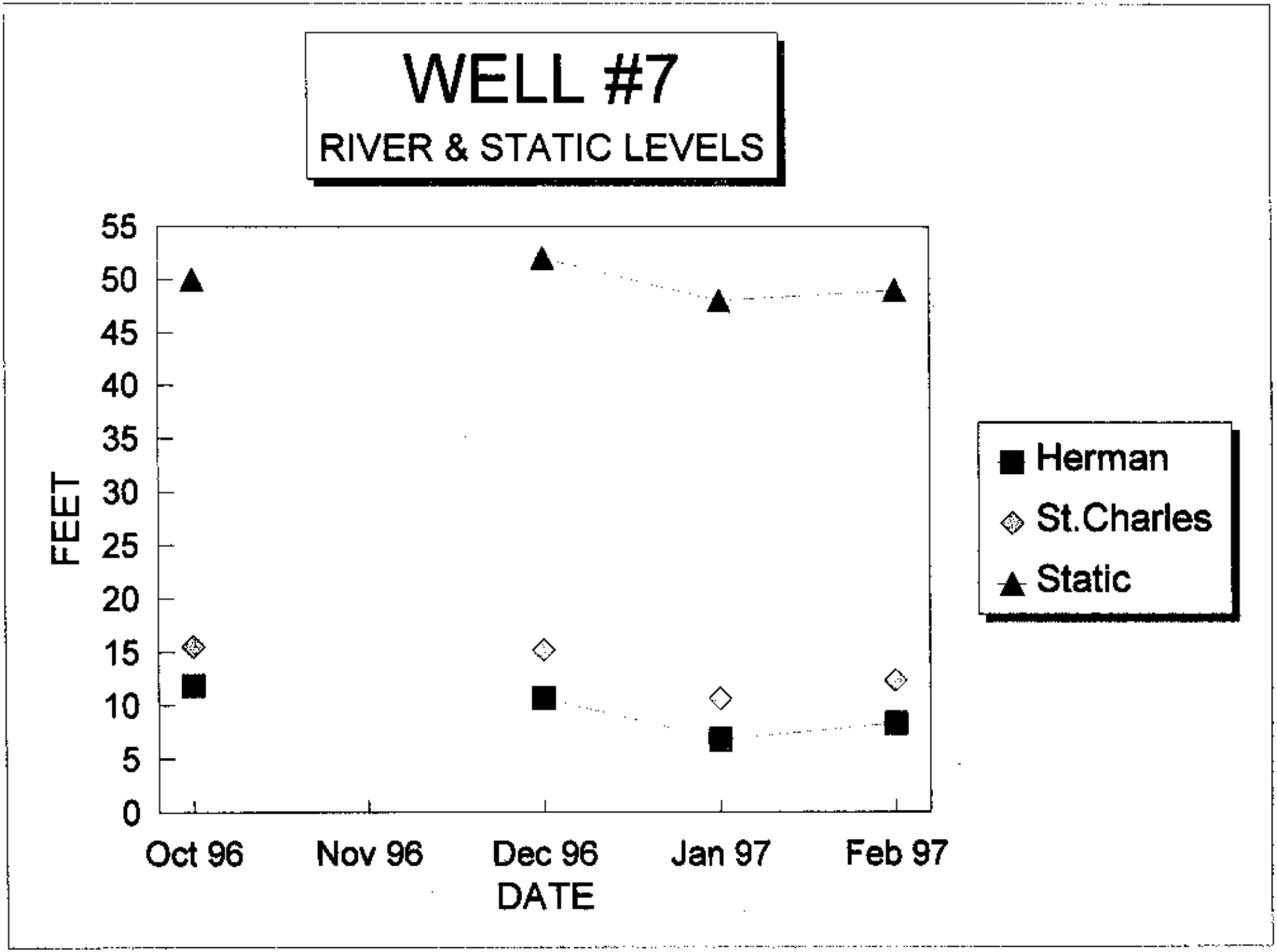

WELL #4
RIVER & STATIC LEVELS
45
40
35
30
25
20
15
10
5
FEET
Oct 96
Nov 96
Dec 96
Jan 97
Feb 97
Mar 97
DATE
Herman
St.Charles
Static

WELL #5

RIVER & STATIC LEVELS

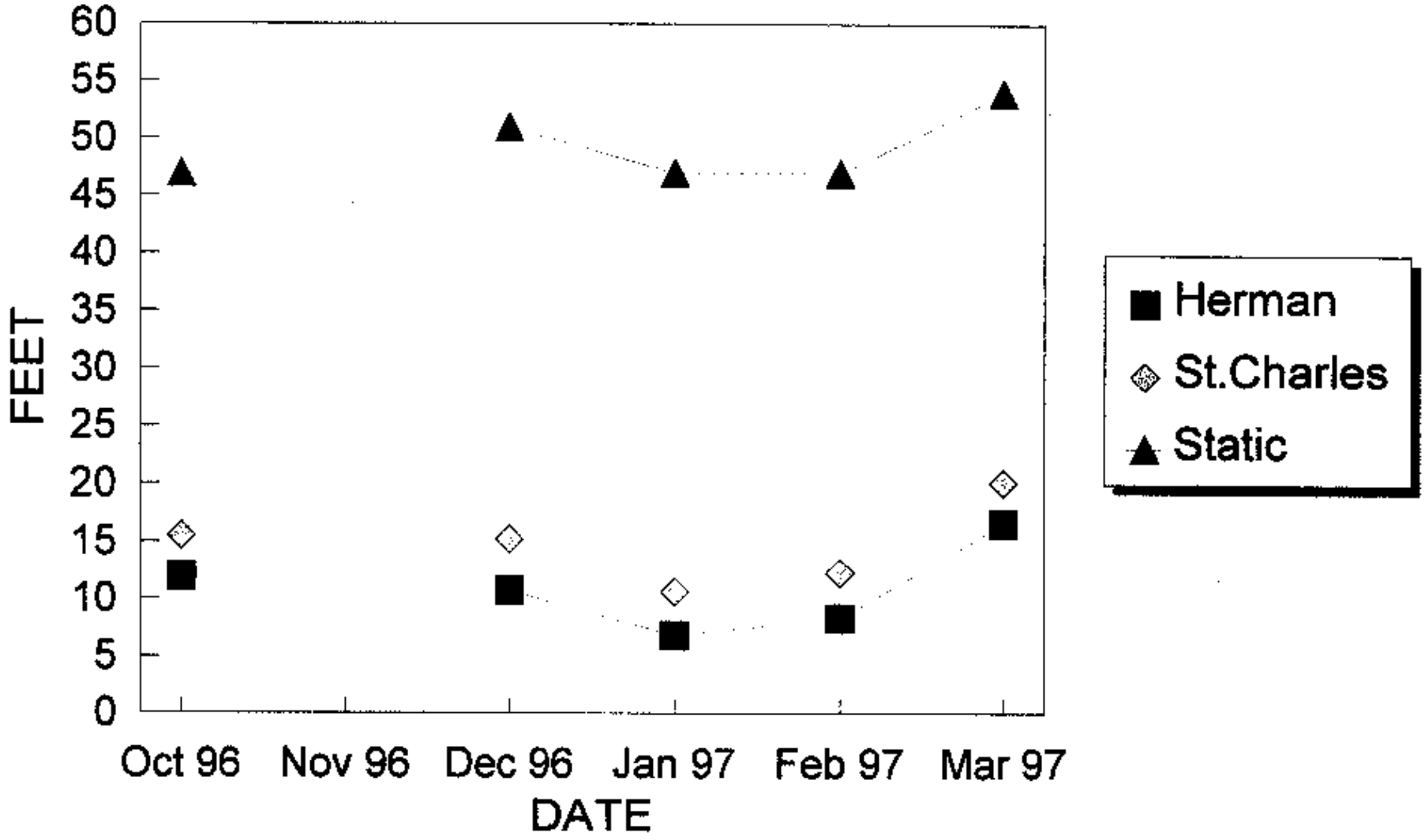


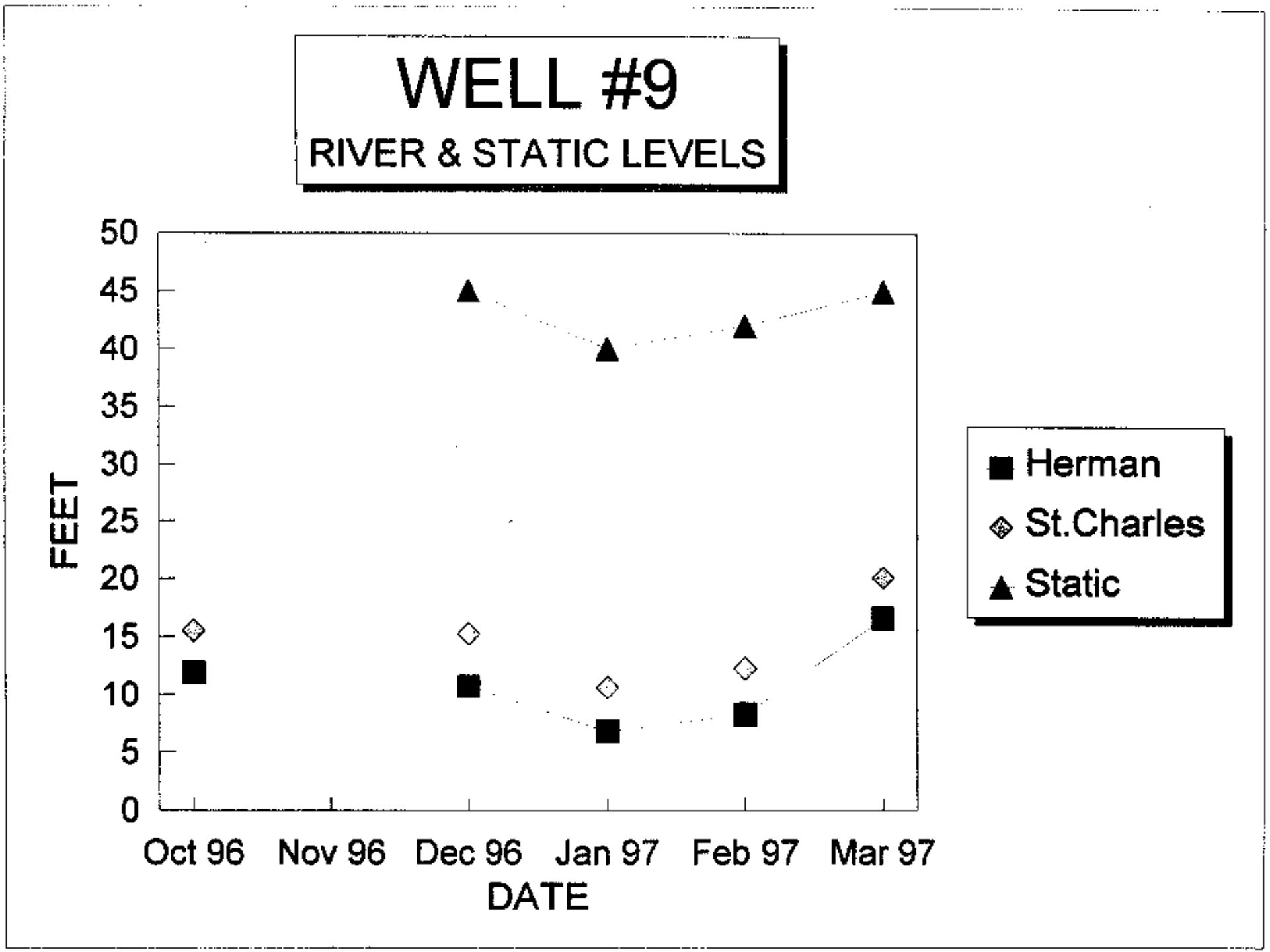

WELL #6
RIVER & STATIC LEVELS
60
55
50
45
40
35
30
25
20
15
10
5
FEET
Oct 96
Nov 96
Dec 96
Jan 97
Feb 97
Mar 97
DATE
Herman
St.Charles
Static


WELL #7
RIVER & STATIC LEVELS
55
50
45
40
35
30
25
20
15
10
5
0
FEET
Oct 96
Nov 96
Dec 96
Jan 97
Feb 97
DATE
Herman
St.Charles
Static

WELL #8

RIVER & STATIC LEVELS




WELL #9
RIVER & STATIC LEVELS
FEET
50
45
40
35
30
25
20
15
10
5
0
Oct 96
Nov 96
Dec 96
Jan 97
Feb 97
Mar 97
DATE
Herman
St.Charles
Static